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RECTAL AND ANAL SURGERY,

WITH

A DESCRIPTION OF THE SECRET METHODS
OF THE ITINERANTS,

BY

EDMUND ANDREWS, M.D., LL.D.,
///

PROFESSOR OF CLINICAL SURGERY IN THE CHICAGO MEDICAL COLLEGE,
SENIOR SURGEON TO MERCY HOSPITAL,

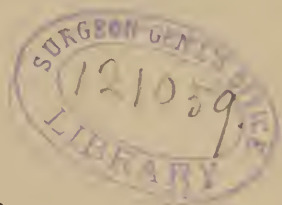
AND

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WITH ORIGINAL ILLUSTRATIONS.

CHICAGO:
W. T. KEENER,
96 WASHINGTON ST.
1888.



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PREFACE.

The untutored "Pile Doctors," alias the "Itinerant Rectal Specialists," now traversing the country, have accomplished one good result. They have compelled physicians to give more attention to the neglected subject of rectal diseases.

Hence, has arisen an urgent call for information on two points.

1. What are the best methods of diagnosis and treatment of these affections known to the regular profession?

2. What are the secret methods of the itinerants, and what is their value?

To answer these questions this book is written.

We have endeavored to condense into it the results of our own special investigations in this direction, and to give in a form at once compact, and yet sufficient for the guidance of practitioners, the established opinions and methods of the best men in America and Europe.

To this we have added under each heading the secret methods and prescriptions of the irregulars, which we have been gathering up for several years past.

The evolution of the modern "itinerant rectal specialist" is an amusing bit of history, and may more properly be given space here than in the text.

About the year 1871, a young and impecunious physician settled in a village in central Illinois. Having abundant leisure, he spent a portion of it in

contriving a plan for treating piles, by injecting into them, with a hypodermic syringe, a mixture of carbolic acid and olive oil, in the proportions of one part of the former to two of the latter.

Having tested the plan upon some patients, he found that it would often effect beautiful cures, and, forthwith, abandoning his poverty-stricken local practice, he began his travels as an itinerant pile doctor. From him the plan spread. Quacks sold the secret to each other at high prices. They divided up the United States into districts, and sold local "rights" to practice the plan, after the manner of patent rights, each purchaser being solemnly sworn, or pledged, to confine his practice to his own district, and to keep the secret of the methods.

For a time the speculation in local rights flourished amazingly, but in the year 1876 we discovered the secret, and published it in about fifteen medical journals which put an effectual stop to further sales of "district rights." Some of the quacks left the business, and the rest abandoned their speculations, and settled down to the more prosaic work of traveling in circuits, and advertising to "cure piles without operation, and without taking the patient away from his business."

Presently the itinerant found that he needed "more light." Patients came to him with fistulas, ulcers, etc., and he knew not what to do for them. He needed more knowledge and more apparatus.

Demand produces supply.

A so-called "Doctor" conceived the idea of fleecing the itinerants by furnishing them at a high price with the knowledge which they "so plentifully lacked." He prepared a very small secret pamphlet, a copy of which

is now before us, giving brief instructions how to treat piles, and about five other of the most common rectal troubles, such as fistulæ, ulcers, etc. He also put up a little case of instruments, worth intrinsically about fourteen dollars, and called his plan a "System of Rectal Surgery." He sold the secret pamphlet and case of instruments to itinerants for \$100, and sometimes, it is said, as high as \$300. He prudently excluded from the case all cutting instruments, knowing well that the ignorant itinerant could not be trusted with edged tools, and he sternly forbade all cutting operations. The itinerant was not allowed to know the composition of the applications directed in the secret pamphlet. He had to buy them of the author of the "System," thus continually paying him tribute. Several of these "systems" sprang into existence, and competed for business by underselling each other, and by adding more instruments to the cases.

The itinerants themselves, however, enlarged the area of their jurisdiction, by adopting the idea, derived from another source, that the rectal papillæ, and the little *sacculi Horneri* of anatomists are not natural organs, but awful "lesions," which have terrible consequences, and, therefore, must always be snipped out or split open. This gave them a grand impetus and a new source of income, not taxed by the author of any "System," and with this they acquired their first hold upon cutting instruments.

Thus the evolution of the pile doctor proceeds. From knowing originally only one thing, he has now a smattering of about six things, and has become an "Itinerant Rectal Surgeon."

The truth is, that most physicians have greatly neg-

lected the study and treatment of rectal diseases, and left an important field of practice almost vacant, thus giving charlatans an opportunity to step in and occupy it in pestiferous numbers.

A work of the size of this cannot of course be an exhaustive treatise on the etiology, pathology, and other scientific aspects of rectal diseases. We have simply aimed to produce a compact manual, sufficient to guide the general practitioner in the most approved treatment of all the more common rectal and anal affections, and we hope that we have in some measure succeeded in our purpose.

No. 6 Sixteenth street, Chicago, Nov. 1, 1887.

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RECTAL AND ANAL SURGERY.

CHAPTER I.

EXAMINATION OF THE RECTUM.

There is a vast amount of negligence, and even ignorance, displayed in the examination of rectal diseases, and consequently many erroneous diagnoses. We may therefore be permitted to insist strongly on thoroughness, system, and precision in our examinations. To obtain these we may proceed as follows :

1. Induce the patient to give his own account of his trouble as he understands it, and when he pauses, ascertain by questions whatever he has not explained, under the following heads, viz.: The origin and duration of the disease, the pains or itching present, the discharges of pus, blood, fæces and mucus, the defecation, constipation, diarrhœa, etc.; the protrusion of lumps, prolapse of the bowel, etc., should be inquired into, and their behavior ascertained. Do they bleed ? Do these return spontaneously after protrusion, or must they be returned by the hand ? Do they remain always down ? Is there any urinary trouble present, and if so, what ?

These inquiries being made, an external physical examination is next in order. This may be made on a bed, a table, or a gynæcological chair. Generally a position on either side, with the knees drawn up, is best; but the lithotomy position is good, as well as that on

the knees and elbows, which gives a good light, though it cannot be long maintained with comfort. The light may come from a window or a good lamp. Even a short piece of candle will furnish a light for external inspection, if held close to the parts.

Observe any change of color, any tumors or projections, any hard spots indicating cancer, or tracks of fistulæ. Note any orifices of fistulæ, any ulcers, eczematous vesicles, or external hemorrhoids, or fissures. By spreading the parts a little with the fingers, fissures, polypi, and ascarides may be revealed.

The internal examination requires more preparation. The bowels should be well emptied either by natural effort alone, or aided by a full injection. The first step may be to examine with the index finger. I generally prefer the position on the back, but some choose the side. The nail being made short and smooth, the finger is well lubricated, and gently insinuated through the orifice. Most surgeons prefer the index finger on account of its superior delicacy, but others like the middle digit, because of its greater length, though the superiority in length is more than lost by the interference of the adjacent knuckles. In using the index, the deepest touch is effected by putting the radial side of the hand toward the perineum, and letting the three unused fingers extend backward behind the sacrum.; but in examining the prostate gland, the middle finger is best with the palmer surface turned towards the gland.

When a deeper or more searching internal examination is needed, additional instruments are used. The position of the patient must be such that a first-rate light can be thrown into the cavity. It may be direct

sunlight reflected by a mirror, the light of a bright sky, or a strong artificial light. In an office or hospital one may have a specially strong argand burner with the light concentrated either by a lens, or by a large laryngoscopic concave mirror, or by both. An electric light is splendid, and small incandescent electric lamps are made for the purpose, but they have the objection of requiring a battery to keep them in action. The best portable illuminator to be carried to all sorts of localities and residences is a coil of magnesian wire. This, when held in the flame of an oil lamp or a gas jet (a spirit lamp is better), gives a magnificent white light almost equal to direct sunshine in its blinding splendor. The beam may be reflected into the speculum by a plain or concave mirror, or thrown obliquely past the surgeon's shoulder directly into the opening. A plate or basin should be under the light to prevent the red-hot particles of magnesia from injuring the carpet or the bedding as they fall. A calcium light of course would be excellent, if one should happen to be accessible at the place needed, but this could almost never be expected. The specula which have been invented for rectal exploration have been numerous, and generally of poor quality, though most of them are capable of giving some information if well used. In considering what we need, we must bear in mind that nine-tenths of the lesions to be examined lie within an inch of the orifice, and hence the speculum oftenest used must show the latter, even if it fail on the deeper parts. Practically one needs at least two kinds, one short one to show the lower walls of the rectum through lateral openings, and the other much longer and open at the end, for the exploration of the remoter portions of the

viscus. The long instrument is inserted deeply and then slowly withdrawn, showing successively every part of the membrane as it prolapses over the open extremity. Of the short instruments, one of the best is that of Allingham. It consists of a thin, metallic, trumpet-shaped shell, fitting closely to an ebony removable plug or core, which projects beyond the tip to facilitate insertion. A fenestrum or slot extends the whole length. The instrument is inserted with the plug in, and the fenestrum on whatever side it is desired first to examine. The plug is then withdrawn and the membrane inspected; the plug is then re-inserted and the fenestrum turned in a new direction, when the plug is again withdrawn. The plug prevents the edges of the fenestrum from scraping the membranes painfully, and by several re-insertions of it the opening can be turned to every part of the rectal walls. The inner opening shows something of the membrane prolapsed over it, but the orifice of the tip is too small, and the instrument too short for efficiency in deep explorations, but it is long enough for all except a few cases.

Dr. Kelsey, of New York, has devised a good bivalve speculum, which is here shown. Glass fen-



CODMAN & SHURTLEFF,
BOSTON.

FIG. 1 ALLINGHAM'S SPECULUM.

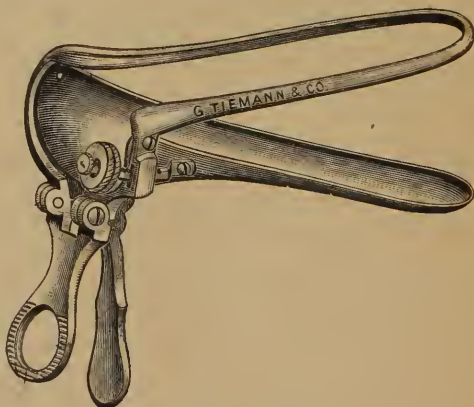


FIG. 2. KELSEY'S SPECULUM.

estrated specula are in use, but are inferior in quality. The present rectal itinerants generally use a small, tapering speculum, open at the tip, and having a plug to facilitate entrance. Like Allingham's, it is too short and too small for deep work, but as it has a lateral fenestrum, closed by a removable slide, most of the objects sought by that ignorant class can be brought into view by means of it.

Pratt's speculum is a modification of Lane's trivalve. Like the older form it shows three fenestra at once

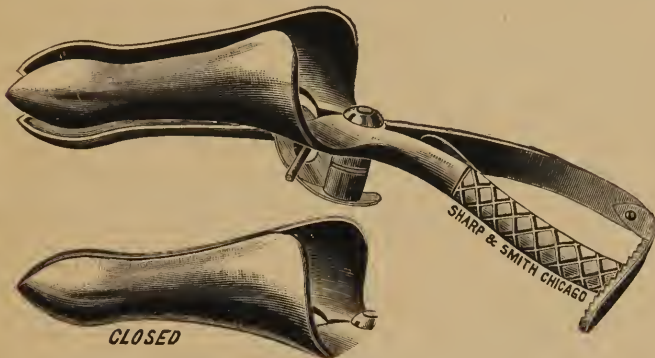


FIG. 3. PRATT'S SPECULUM.

when expanded, and by a moderate amount of rotation exposes successfully every part of the circumference. The bulbous extremity is to make it self-retaining, so that the operator can have both hands at liberty without the help of an assistant. One objection to it is that when expanded the three segments of the bulb throw the walls of the rectum back farther than the ring of the verge of the anus, rendering it difficult to see the side of the passage above the ring. In closing the blades a little care is necessary to prevent the sharp points of the segments of the bulb from hooking into

folds of the mucous membrane. Like the preceding instruments, it is too short for deep exploration. In examining the deep parts of the rectum a speculum in the form of a cylindrical tube, inserted by aid of a plug, is the best. We generally use a set of three different sizes

made in this form. The tube is five inches in length



FIG. 4. AUTHOR'S DEEP TUBULAR SPECULUM.

and made of thin polished metal, and the plug is of polished hard rubber. The light is thrown in by a concave mirror, and the membrane easily inspected in every part as it prolapses over the end of the tube during its withdrawal. If it is desired to inspect still deeper, we use a tube curved at its inner part. This

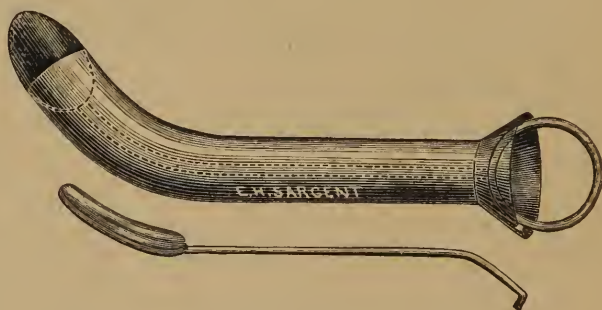


FIG. 5. AUTHOR'S CURVED RECTAL SPECULUM.

being inserted follows the curve of the rectum, and the membrane prolapsing over the end is viewed by an oval mirror inserted on a staff, giving an inverted view, like the laryngoscope. The mirror is concave and gives a magnified view of the parts. The plan is modified from one devised many years ago by Bodenhamer. This enables one to get a very deep view of the rectal

walls, but still nine-tenths of practical rectal surgery lies within two inches of the verge of the anus, and the deeper instruments do not come to very frequent use.

Where a critical inspection of every point on the rectal walls is desired, there is nothing equal to a full-sized tubular speculum, even for parts near the outlet. We use a short one for that location, on account of the illumination being better, and the fact that with a short tube the membrane closing over the end can be viewed at widely varied angles.

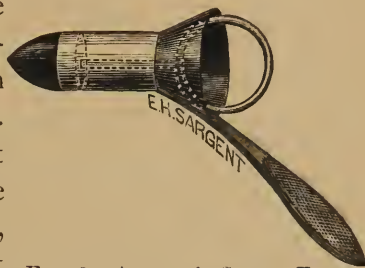


FIG. 6. AUTHOR'S SHORT TUBULAR SPECULUM.



FIG. 7. VAN BUREN'S SPECULUM.

Tubular specula however are solely for examination. One cannot use them in operating. A pair of Sims'

specula set in handles is very convenient in many cases both for examination and for operations.

Many patients will tolerate a pretty full examination without ether, while others are more sensitive and must be anæsthetized. The examination is to be conducted slowly and patiently, every part of the walls being thoroughly scanned, and suspicious spots probed to find fistulous orifices. In difficult cases it is necessary to make a forced dilatation of the rectum, in order to obtain a clear view. This is to be done under the

influence of anæsthetics, and is accomplished by inserting two fingers or a thumb into the rectum on each side, and slowly but firmly pulling the rim of the anus outward toward the ischia. This temporarily paralyzes the sphincter and lays the cavity well open to inspection.

If a stricture beyond the reach of the finger is suspected, a rectal sound, bent to the curve of the organ, is needed. We have, for fifteen years, habitually used one with a strong, hollow steel staff, and having oval bulbs of different sizes to be screwed upon the staff as required. The handle, staff and bulbs are perforated longitudinally for the convenience of injecting through them. This instrument can often be carried up far enough to be felt by the hand near the umbilicus, but it must be used with great gentleness, as ulcerated spots in the intestine are sometimes exceedingly thin and may be ruptured. The easy passage of a large bulb proves the absence of stricture as far as it goes, but its arrest does not prove the existence of one. The upper rectum and lower colon have not only plications of membrane projecting into them, but the walls of the gut are liable to fold up over the end of an instrument, so that in deep sounding a mere arrest of progress does not prove the stricture.

The hand is sometimes introduced into the rectum for deep exploration. The operation, however, has sometimes caused death, and should only be resorted to

when the emergency is such as justifies incurring

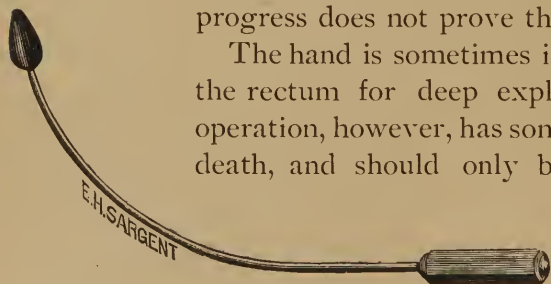


FIG. 8.—THE AUTHOR'S RECTAL SOUND.

risk. The hand to be introduced should be small in circumference, well lubricated, and introduced very slowly and carefully, with the fingers gathered into the form of a cone. Of all exploratory instruments, the index finger is the one most frequently called for, but probes are necessary to trace fistulæ, and a grooved needle, an aspirator or a hypodermic syringe, may be wanted to detect abscesses.

SETS OF INSTRUMENTS FOR RECTAL SURGERY.

The little poverty-stricken cases of instruments sold at extravagant prices to itinerants will never satisfy an educated man. Generally they have not even a pair of scissors in them, and the selection is miserable.

If a physician wishes, he can provide himself with a far better outfit at a much cheaper rate by ordering from any first-class instrument store, one of the following sets:

SMALL RECTAL CASE.

- 1 Allingham's rectal speculum.
- 1 Scalpel.
- 1 Curved, sharp-pointed bistoury.
- 1 Curved, blunt-pointed bistoury.
- 1 Straight Scissors.
- 1 Grooved Director.
- 1 Silver Probe.
- 1 Porte-caustique.
- 1 Small vulsellum pile forceps.
- 6 Curved needles (assorted sizes.)
- 1 Tait's lock artery forceps.
- 1 Spool heavy ligature silk.

LARGE RECTAL CASE.

- 1 Allingham's rectal speculum.

- 1 Andrews' tubular rectal speculum.
- 2 Van Buren's specula.
- 1 Scalpel.
- 1 Curved, sharp-pointed bistoury.
- 1 Curved, blunt-pointed bistoury.
- 1 Straight scissors.
- 1 Small vulsellum pile forceps.
- 4 Tait's lock artery forceps.
- 1 Grooved Director.
- 1 Silver Probe.
- 1 Porte-caustique.
- 1 Double tenaculum.
- 1 Large laryngoscopic mirror.
- ½ Ounce magnesian wire for illumination.
- 1 Small spirit lamp.
- 6 Curved needles (assorted sizes.)
- 1 Smith's clamp and cautery irons.
- 1 Hypodermic syringe.
- 1 Spool heavy white silk.
- 1 Hard rubber clyster syringe.
- 1 Curved rectal sound with 6 bulbs.

The small case will be furnished by most Chicago instrument dealers for about sixteen dollars, and the large one for about fifty dollars. If fewer or more instruments are required, the price will be lower or higher, in proportion. Even the smaller case is much better than those possessed by the itinerants.

CHAPTER II.

HÆMORRHOIDS, OR PILES.

Hæmorrhoids, in the strictest sense, are varicose hæmorrhoidal veins. However, the term as used in popular language has been loosely extended to include almost every small tumor about the anus, whether of varicose origin or not. Some centuries ago they were called "Emerods," and the disease appears under that name in King James' version of the Old Testament, where the Philistines are said to have been smitten with emerods, and to have made golden models of them as expiatory offerings.

This disease has its origin in the fact that when the patient strains in defecation, the mucous membrane is more or less everted, and in that position the hæmorrhoidal veins have no support from surrounding parts, so that the straining, by forcing the blood downward, distends them into pouches, or varices. When the rectum is continually packed with retained fæces, the veins are compressed above the anus, and the return of blood being restricted, they become additionally distended by this obstacle, so that constipation is a leading cause of the disease.

Any obstruction of the portal vessels acts in the same way, hence diseases of the liver, large abdominal tumors and the pressure of the gravid uterus in pregnancy are common causes. When the inflammation of acute dysentery progresses downward to the vicinity of the anus, the veins are obstructed by inflammatory deposits around them, so that piles often appear in the later

stages of that disease. Finally sundry small nævoid tumors of the anus, as well as hypertrophied folds of skin and mucous membrane, soft polypi, and lumps formed by clots of extravasated blood under the skin, are popularly classed as piles, though not properly varices.

In cases where the obstruction is temporary, recent hemorrhoids may recover spontaneously; but if subjected to the continued action of the cause, they tend to enlarge and become more and more inflamed. At first they are troublesome only at intervals, but these "fits of piles" grow gradually longer and ultimately merge into each other and the tumors become permanent. As the distended condition continues, the parts become inflamed, and the integument and the connective tissues around the veins become first swollen and then permanently hypertrophied, and protuberances which originated as mere venous pouches, become solid and firm fleshy tumors. Sometimes clots of blood form in the veins, obliterating them, and leading to their cure by atrophy. At other times the veins burst, forming globular clots in the connective tissue outside the vessels, and these, like all other lumps in this region, are generally termed piles. They sometimes give origin to suppuration and are discharged, but generally the clots are absorbed in the course of a few weeks.

Piles are usually divided into internal and external forms. The internal are those which originate just above the verge of the anus, and are therefore covered with mucous membrane. At first they only appear externally when thrust down in defecation, and recede again out of sight when the effort is over. As they

grow larger they are gripped by the sphincter when down, and prevented from returning, causing much pain, and sometimes bursting under the muscular grasp of the sphincter, and bleeding freely. The patient now learns to relieve his pain by pressing them in again with his fingers. At a still later stage they often become too large to remain in at all, and though still called internal piles they are now habitually external in position. At the verge of the anus, where the skin



FIG. 9.—INTERNAL AND EXTERNAL PILES.

joins the mucous membrane the subcutaneous connective tissue is somewhat denser than above or below, binding the integument there closer to the inner edge of the external sphincter. This circle of denser tissue resists the distension of the veins at that line, so that we usually find the internal piles above separated by a narrow groove from the external piles below. However, the dense tissue does not always maintain

its grip, and we often find internal and external piles running into each other with no groove to mark the boundary between them. In short, the same pile may be both internal and external. Physicians often speak of suspected internal piles high up in the rectum. This is an error. There are no internal piles so high up that they never show during defecation.

External piles are specially liable to become obliterated by thrombus, suppuration, etc., in which case they leave sundry projecting tabs and folds of skin which are

still called external piles, though no longer containing enlarged veins. Most of the temporary piles formed by extravasated clots are also in the external group.

The skin and mucous membrane covering piles near the verge of the anus are excessively sensitive, but the mucous membrane covering the upper portion of internal piles is nearly devoid of sensibility, a fact which should influence all our plans in operating.

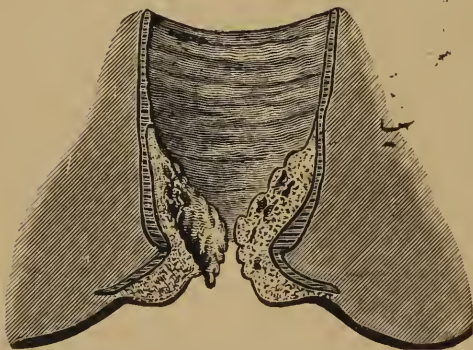


FIG. 10. INTERNAL AND EXTERNAL PILES NOT CLEARLY SEPARABLE WITH A SMALL POLYPUS GROWING ON AN INTERNAL PILE.

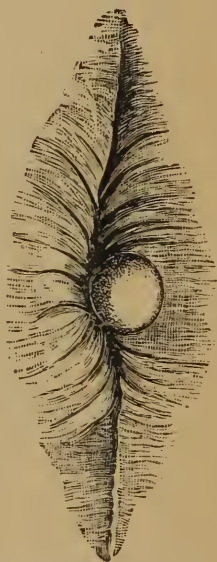


FIG. 11. EXTERNAL PILE FORMED BY GLOBULED CLOT UNDER THE SKIN.
—(Smith.)

Hemorrhoidal tumors have a remarkable erectile power, not mentioned by most authors, and resembling that of the *corpus spongiosum* of the penis. This singular tendency enables us to bring internal piles into view for examination or operation, by simply irritating them by a slightly rough handling with the finger. Under the touch they, in a few moments, erect them

selves to their full size and form, and are readily brought to view.

CURE OF PILES BY STRETCHING.

Perhaps the mildest operation upon internal or half internal piles is that employed by the French surgeons, Prof. Vernuil and M. Fontan. It consists simply in making a rather slow and gentle, but complete and thorough, dilatation of both internal and external sphincters. This may be done by dilating instruments or by introducing gently through the sphincters two oiled fingers of each hand, and slowly pulling the sphincters in opposite directions until they are thoroughly stretched, or dilated. An anæsthetic may be needed. We have not fully tested the plan in our own practice, but French authorities claim that a large proportion of hæmorrhoids are radically cured by this manipulation. It may, therefore, be a desirable method, especially when the patient is timid and cherishes a horror of ligatures and instruments.

TREATMENT BY LIGATURE.

Probably the English and American surgeons have favored ligation for internal piles more than any other plan, on account of its comparative safety from hæmorrhage, embolism and abscesses. Dr. Allingham, of London, surgeon of St. Mark's Hospital for Rectal Diseases, has been the most conspicuous champion of the method, but König, of Gottingen, and many others on the continent, also favor it.

The application of the ligature renders hæmorrhage nearly impossible, and puts a very efficient barrier against the entrance of clots or septic material into the channels of the veins.

The use of the ligature for piles is very ancient. Hippocrates mentions it, and Celsus describes it. The success is excellent. When properly done, the cure is as near to absolute certainty as surgical operations ever attain, and the danger is a mere trifle. The mortality thus far ascertained is nearly as follows:

	CASES.	DEATHS.
Allingham's report of cases in St. Mark's Hospital up to 1859.....	1,763	5
Allingham's report of cases in St. Mark's Hospital since 1858.....	2,250	1
Allingham's report of cases in St. Mark's Hospital since previous report.....	250	0
Allingham's private practice.....	1,600	0
Total	5,863	6

This is about one death in a thousand cases. It should be noted that five of these deaths occurred previous to 1859, when antiseptics were unknown and the hospitals of London were in a very unhealthy condition. Since that, Allingham reports 4,100 cases with only one death. The following authors have expressed their opinion in favor of ligation: Gross, Van Buren, Bodenhamer, Gowlland, Alfred Cooper, Curling, Quain, Ashton, Syme, Bushe, Copeland, Sir Benjamin Brodie, König, Frank Hamilton, Ashhurst, Cripps, and many others.

PREPARATION OF THE PATIENT FOR OPERATION.

It is best to investigate the patient's whole condition, and rectify as perfectly as possible all diseased tendencies. Bright's disease of the kidneys adds greatly to the risk of all operations, and such cases are to be avoided if possible. Cripps refuses operations also in

all cases of piles dependent on cystitis, but this is an error. When cystitis and piles co-exist, each one powerfully aggravates the other, and the cure of the piles greatly assists the cure of the bladder. Many times the latter can never be cured until the piles are operated on. In malarious regions a full dose of quinine four times a day for forty-eight hours is a good preparation for the operation. The hair about the anus should be shaved off, and an antiseptic wash used there three times daily for two or three days. A good solution is carbolic acid, one part to fifty, or corrosive sublimate, one part to three thousand of water. On the day of operation the bowels should be well emptied by a cathartic, and the meal next preceding the operation should be omitted, so as to avoid vomiting during the anæsthesia.

Where one or two small piles only are to be operated on, they can be anæsthetized sufficiently by clamping their bases and in that state injecting them with cocaine; but where the disease is extensive, ether is necessary. If the latter is used, the patient should strain down the piles, if possible, just before the operation, so as to bring them to view, and then go upon the table and be anæsthetized. After etherization, he may be placed in the position of lithotomy, or upon either side, with the knees drawn up, at the pleasure of the operator.

Most surgeons now forcibly dilate the sphincter, which excites the erectile action of the piles, and also opens the anus, thus bringing the tumors well into view. It is done by inserting one or two fingers of each hand into the anus, and gently but steadily drawing in opposite directions for three or four minutes.

All rapid traction is to be guarded against, because there is danger of rupturing the tissues. It is not true, however, as some writers imply, that this dilatation is always necessary. In many cases the piles are sufficiently exposed already, and in most of the remainder a slightly rough handling of them with the finger and forceps, or tenaculum, causes the erection before described, and enables one to bring them well into view. The irritation of a forced dilatation should be avoided whenever it is unnecessary, yet, the parts just above the verge must be well searched, lest hidden piles escape notice and make future trouble.

We next consider the number and size of the piles, for if they occupy the whole verge of the anus, an absolutely complete removal of them down to their bases will make a circular wound completely surrounding the orifice, whose contraction in healing will cause a stricture of the anus,—a fact which many eminent authors strangely neglect to mention. It is necessary in all cases to save mucous membrane enough to constitute a soft and distensible verge to the anus. Hence, when the piles occupy the whole rim, we do not tie them close to their bases, but about half way between the base and summit, so as to leave some mucous membrane and skin between the tumors, and not included in the ligatures. There need be no fear of failure on this account. Although the ligature takes off only half the height of each pile, the stumps, after swelling temporarily, always shrink down and become atrophied, leaving a perfect cure. Having considered thus where to place the ligatures, the surgeon seizes a pile with small vulsellum forceps, or a tenaculum, and draws it out. At this stage Allingham takes a pair of scissors,

and commencing at the groove where the lower end of the pile joins the skin, dissects it up from the sphincter some slight distance into the bowel, keeping close to the muscular coat. The wound does not bleed much, because the arteries of the pile enter it at its superior border. This incision severs the nerves of sensation,

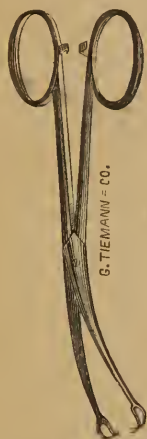


FIG. 12.—SMALL VULSELLUM FORCEPS FOR PILES.

which enter from below, and makes the presence of the ligature less painful. However, when the piles constitute almost a continuous ridge around the anus, this plan cannot be adopted, as a ring-shaped wound and subsequent stricture will result. This deep dissection also is not free from chances of hæmorrhage. Arteries sometimes take abnormal directions, and scissors also go at times a little deeper than was intended. Hence many surgeons pre-

fer, after seizing the pile, to cut a little groove at the proper place, around the lower half of its circumference, simply going through the integument, so as to divide the cutaneous nerves, and thus blunt the sensibility and prevent the pain which would otherwise occur. The ligature, which should be very strong, is tied in the groove made by the knife, and if the pile is large it should be tied three times around, as otherwise the yielding of the tissue under the pressure of the ligature is liable to slack its tightness and prevent complete strangulation. After tying the knots very securely it is best to snip off the summit of each tumor, but not to cut so closely to the ligature as to risk the latter's slipping off. We prefer silk, hemp or linen threads. Catgut can be used, but it needs special

care in tying, as under the softening effect of moisture it becomes slippery and is liable to yield, and permit hæmorrhage. Many try to press the ligature stumps back into the bowel, but we are of the opinion that there is no use in that procedure. If they remain outside they can be kept well disinfected, and all bad odor and danger of septic infection prevented. The operation being finished the stumps should be washed with an antiseptic solution, dressed with iodol or iodoform and covered with a handful of antiseptic gauze held in position by a T bandage. Anodynes may be given as required, and it is well to give a hypodermic injection of morphine just before the operation. By a careful application of an eight per cent. solution of cocaine externally, or of a four per cent. solution by a hypodermic syringe under the skin and mucous membrane of the anus, many mild cases can be ligated with but little pain without any ether or chloroform, but care must be taken not to exceed a safe dose. A young surgeon in New York trying to operate under cocaine, and not getting full anæsthesia, yielded to the temptation to repeat the dose until he had injected eighteen grains into the tissue of the rectum, causing the death of the patient. Overcome with horror at the result of his error he then committed suicide.

Frequently the operation will be followed by a spasmodic contraction of the sphincter of the bladder, causing retention of urine, and compelling a resort to the catheter once or several times. The catheter may be tied in if necessary. Some surgeons try to prevent the spasm of the neck of the bladder by dilating it with a large urethral sound at the close of the operation. The treatment of the bowels is not agreed upon among

surgeons. If they are made to operate daily they cause a repetition of the painful movement. If they are restrained by opiates several days, as advised by Allingham, the fecal mass in the rectum becomes large, and hurts the more violently at last. The best way is to empty the bowels thoroughly before operating, and allow but little solid food for three days after. At the end of some forty hours after the operation give a mild cathartic, and at the same time soften the contents of the rectum by a warm injection. This will cause an evacuation with but little pain, and by similar means we can procure daily painless movements afterward, especially if the parts be well brushed with cocaine.

TREATMENT OF HÆMORRHAGE AFTER OPERATIONS IN THE RECTUM.

All operations for piles are liable to a possible primary or secondary hæmorrhage, though the method by ligature is quite safe in this respect. As the bleeding may take place inside the sphincter, a great quantity of blood may accumulate in the colon before it is observed. If hæmorrhage is discovered, or suspected, the bleeding point must be sought for, even if one has to forcibly dilate the anus and pull down the mucous membrane. The spot cannot be much above the verge. If it cannot be discovered Allingham ties a double string into the center of a large bell-shaped sponge, and pushes it up five inches above the bleeding point, so as to prevent the blood escaping upward into the colon. He then firmly packs the parts below with cotton dusted with powdered alum or iron persulphate, and leaves the tampon there a week or more. If the

bleeding point can be found approximately, but not exactly, the whole adjacent patch of mucous membrane can be pinched up and tied *en masse*, or a double ligature may be passed under the spot by a curved needle and tied each way, thus enclosing the bleeding spot.

THE HYPODERMIC INJECTION OF PILES, OR THE METHOD OF ITINERANTS.

In the year 1871 there lived in the village of Clinton, near Jacksonville, Illinois, a young physician named Mitchell. His practice was small, and afforded him superabundant leisure, which he employed in devising a new treatment for piles. Being a good thinker he soon conceived the idea of treating hæmorrhoids by the hypodermic injection of a mixture of olive oil and carbolic acid. Having tried his plan upon an old farmer of the neighborhood he accomplished a triumphant cure. The old farmer was delighted and garrulous, and the young doctor was needy but ambitious. The two made a sort of copartnership, the old farmer attending to the advertising, while the young doctor received the patients and punctured their piles and their pockets with his little hypodermic syringe. Knowledge of their method spread. Certain itinerants began to sell the secret to others, pledging them to secrecy in turn, and binding each to practice only in the district for which he had "purchased the right." Two men in Chicago are said to have paid \$3,000 for the exclusive secret "right" to a certain portion of Illinois, including their city. Flocks of itinerants bought the secret of each other, and traversed the country in every direction until their handbills fluttered on the shores of the Pacific Ocean. In the year

1876 one of the quacks revealed to us his method, and by taking measures adapted to the purpose we found that he had informed us correctly. We then entered into correspondence with a considerable number of the itinerants, some of whom proved willing to make a clean breast. We also communicated with a large number of regular physicians who had observed the practice of the itinerants, and in some cases had made use of the method themselves. In the course of this investigation we received about 300 letters, and got rough estimates of the results of the injections in about 3,300 cases.

Mitchell commenced with a mixture of one part of carbolic acid to two parts of olive oil, but he gradually varied from his first method, and at length, as I am informed, he partly abandoned the injections and adopted the plan of tearing the interior of the piles to pieces by angular needles set in handles. He probably met some of the dangerous accidents which have occurred in the injection practice, and changed to the needles on that account. His disciples, however, persisted, and in their hands the injections were varied in numerous ways. One of the itinerants wrote us that he had tested "every caustic in the vegetable and mineral kingdoms," but that he came back to carbolic acid as the best, "and the stronger the better."

The excipients generally used were oil, glycerine or alcohol, to which water was sometimes added. Carbolic acid was generally but not always the active ingredient and the strength varied from twenty to one hundred per cent. We were disappointed on the whole in the results. Although there were many beautiful cures, thirteen deaths were reported to us out

of about 3,304 cases, besides a large number of dangerous abscesses, sloughings, and in some cases prolonged and terrible pain, or desperate shock, the latter being probably from embolism. In a number of cases very dangerous hemorrhages occurred, presumed to be from the spasmodic grip of the sphincter bursting the thin walls of a pile, squeezing out the clot, and letting loose the floodgates of the hæmorrhoidal veins, which above the verge have no valves.

It is an old experience over again. Twenty years ago the profession was charmed by the results of coagulating injections thrown into venous enlargements in other parts of the body, but we were soon stopped by the occurrence of deaths from embolism. The hypodermic injection of piles confronts us with similar dangers.

The following accidents have been reported to us out of about 3,304 cases: Deaths, 13; embolism of liver, 8; sudden and dangerous prostration, 1; abscess of liver, 1; dangerous hæmorrhage, 10; permanent impotence, 1; stricture of the rectum, 2; violent pain, 83; carbolic acid poisoning, 1, failed to cure, 19; severe inflammation, 10; sloughing and other accidents, 35.

We are the more particular to mention these disasters, because Dr. C. B. Kelsey, of New York, has recently tried the plan and states that he has never heard of a death from it. Our experience here in the West is very different. Twelve years ago we published nine of these deaths in an article which was extensively republished in the medical journals of this country and of Europe, and about four more fatal cases have come to our knowledge since. Dr. Kelsey, like

one of the present writers, was at first highly pleased with his results, but with his usual sound judgment and candor he observes that further experience developed so many instances of abscess, sloughing, etc., etc., that he has modified his first conclusions, and now applies the plan mainly to selected cases of completely internal piles of moderate size, and having well defined pedicles. (Kelsey on the Treatment of Hæmorrhoids, p. 64.)

For ourselves, we were long ago reluctantly compelled to admit that these injections are dangerous, and until some way of avoiding the perils is shown we can not recommend them except in special and selected cases.

The itinerants varied greatly in the strength of the fluids used. The weak solutions acted more mildly than the others, but they often failed of cure. The strong preparations almost always cured the piles, but they produced a multitude of cases of abscesses and sloughings. The Michigan itinerant above mentioned states that he preferred positive results, and always sought to cause the piles to suppurate or mortify, and to that end he "preferred carbolic acid, and the stronger the better."

The secret pile remedy of "Brinkerhoff System," is the following:

Carbolic Acid.....	j
Olive Oil	℥v
Chloride of Zinc	grs. viij

Mix.

The little pamphlet furnished to the itinerants purchasing the "System" directs that the amount of injection inserted into the tumors shall be as follows:

Largest Piles.....	8 minims
Medium "	4 to 6 "
Small "	2 to 3 "
Club-shaped painless piles near orifice	2 "

“Brinkerhoff’s System” forbids the injection of any but internal piles. He directs hot sitz baths for cases where violent pain follows. His prohibition against the injection of the external kind, is doubtless because of the agonizing distress apt to follow in the latter, owing to their great supply of sensory nerves. He directs to treat only one large, or two small piles at a sitting, and to allow from two to four weeks between the operations.

Dr. E. H. Pratt recommends a mixture of equal parts of olive oil and 95 per cent. carbolic acid, but thinks the following still better:

R	Carbolic Acid.....	3ij
	Glycerine.....fl	3ij
	Fl. Ext. Ergot.....fl	3j
	Water.....fl	3iss

Mix.

The needle of the syringe is inserted well into the tumor, and the fluid injected slowly until a whitish color creeps over the surface. Two or three tumors are injected at a sitting, and the needle is left in from thirty to sixty seconds to prevent hemorrhage. He has also recommended the following mixture:

R	Hydrochlorate of Cocaine, grs	vij
	“Phenol Sodique”.....fl	3j
	Water.....fl	3j

Mix. Inject from twenty minims to a drachm.

“Phenol Sodique,” is merely the trade mark of an impure mixture of carbolic acid sold in the shops.

The itinerants have used a great variety of coagulating injections, including tincture of iron, persulphate of iron, tincture of iodine, mixtures of tannin, solutions of mineral acids, sulphate and chloride of zinc, etc.,

etc., but on the whole carbolic acid mixtures have received the preference. The dangers have generally arisen from embolism, hæmorrhage, abscesses and septicæmia. The lower portion of the hæmorrhoidal plexus of veins empties into the iliac veins, and the upper into portal system; hence clots or globules of the injection may be carried either to the heart or to the liver. Dr. Whitmire, a well-known physician of high standing at Metamora, Ill., tampons the rectum for twenty-four hours after the injection to prevent the clots from moving upward. In case of hæmorrhage, Allingham's method of tamponing, as described above, can be employed.

If the injection plan is resorted to, the following rules should guide us:

1. Unless cocaine is used, inject only internal piles, as those have much less susceptibility to pain than the external ones; however, if an external pile be injected a few minutes beforehand with cocaine, the pain can be in a great measure prevented.
2. Use diluted forms of the injection first, and stronger ones only when these fail.
3. Inject only one or two piles at a time, and allow from ten to thirty days between the operations.
4. Apply cosmoline to the surface to protect it from possible dripping during the operation, and keep the syringe in a few moments to prevent the mixture from flowing out. Inject slowly.
5. Confine the patient to the bed the first day.

TREATMENT OF HÆMORRHOIDS BY THE CLAMP AND CAUTERY.

Von Langenbeck, of Berlin, and Smith, of London, are the chief advocates of this operation, but Mr.

Cusacle, of Dublin, is said to be the inventor of it. The operator seizes the pile with a double tenaculum or with a small vulsellum forceps and draws it out. He then applies to its base the clamp shown in Fig. 13, so as to prevent hæmorrhage and protect the parts beneath from the cautery instruments. Smith then cuts off the piles outside the clamp with hot serrated cautery knives, while others simply use the scissors. In either case the tissue is not divided close to the clamp, but about a quarter or third of an inch external to it. The projecting stump is now thoroughly but slowly cauterized by irons at a black heat, so applied as not merely to sear the cut surface, but to thoroughly

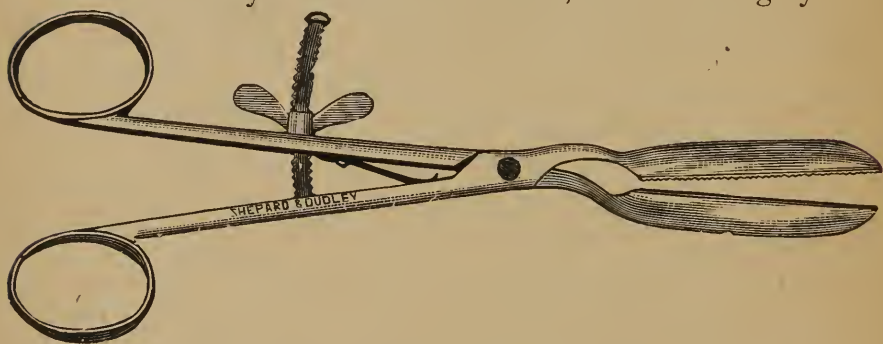


Fig. 13.—SMITH'S CAUTERY CLAMP.

“cook” the whole projecting stump well up to the clamp. The electro-cautery can be used instead of hot irons.

The method effectually cures the piles, but it is a little more liable to hæmorrhage than the ligature, and the idea of burning the parts with hot irons is horrifying to the imagination of the patient and his friends, hence the clamp has had less favor than the ligature, though many excellent surgeons employ it. The after treatment is the same as that after ligation.

TREATMENT OF HÆMORRHOIDS BY THE ECRASEUR.

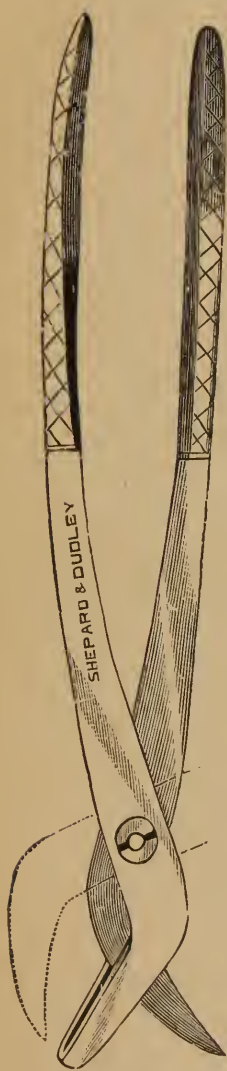


FIG. 14. AUTHOR'S
ECRASEUR-FORCEPS.

Many French surgeons have greatly favored the removal of piles by the chain ecraseur. We have often used for the purpose the ecraseur forceps here shown, which are of our own devising, though by an accident they are credited in the instrumental catalogues to Prof. Byford. The error was not due to him, as he never laid any claim to the invention.

The instrument is easily cleaned, simple in structure, and much more easily applied than the complicated chain ecraseur, and does not break like the wire ecraseur. The effect on the pile is exactly the same as that of the others, neither better nor worse. Smith, of London, has devised a small pile ecraseur, using a wire cable instead of a chain.

The pile being seized with vulsellum forceps, the instrument is applied at the same point where a ligature would be, generally half way between the base and the summit, and slowly tightened until the tissues are severed. The patient must be kept some days in bed, the stumps are treated antiseptically,

and the general management is the same as after liga-

ture. As in all other methods of removing piles, it is necessary to be careful and leave sufficient mucous membrane to make a distensible verge of the anus, otherwise a stricture will follow.

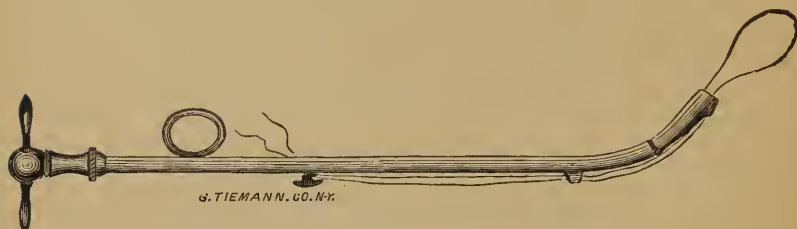


FIG. 15. SMITH'S WIRE CABLE ECRASEUR.

The ecraseur cures piles effectually, but it is occasionally followed by dangerous hæmorrhage, so that its popularity in this country has decidedly waned. In our own practice we have discarded its use.

CRUSHING THE PILE.

Another method consists in crushing the pile with an instrument devised for the purpose, without removing it. This merely diminishes the danger of hæmorrhage without attaining the safety of ligation. It, however, destroys the pile, and causes it to slough off, thus effecting a cure. It has been considerably but not generally employed. It is a more severe operation than ligation and has no advantage over other methods in its results.

VARIOUS CAUTERIES.

Hot irons of various forms have been applied to piles with the effect of curing the tumors. Cautery by needles, either heated by a spirit lamp or by the galvanic current, has been a favorite with some. Electricity in a weaker current is also used to coagulate the blood in the piles with considerable effect.

Potential cautery has been practiced on internal hæmorrhoids with fuming nitric acid, with sodium ethylate, and with *potassa cum calce*. Many successes and many failures have resulted from the use of these inconvenient articles.

EXCISION OF INTERNAL PILES.

A few authors have lately advocated a partial return to the discarded plan of cutting out internal as well as external piles, resorting to one or another method of preventing hæmorrhage, according to the fancy or the judgment of the writer. We are sorry to say that none of these plans are safe. One may operate a hundred times and have no trouble, but sooner or later the surgeon who cuts out large numbers of internal piles will have instances of dangerous hæmorrhage. If the incision were external, where unskilled attendants could apply compression, it would be less objectionable, but the bleeding point

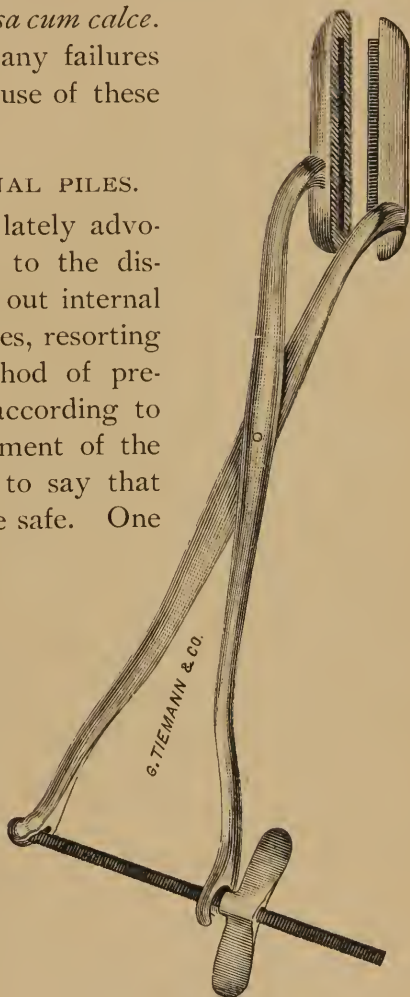


FIG. 16. NOTT'S ECRASEUR.

is above the sphincter, and the patient bleeds a colon-full before he knows the cause of his faintness. He

then expells a great mass of clots, and the sphincter closes, stopping the external flow and deceiving the patient with a false appearance of improvement, until another mass is expelled, and so on through a perilous series of refillings and expulsions. If the surgeon who operated happens to be inaccessible, or not to be found, the patient will be in great danger, for, even if some well-educated physician not in surgical practice is called, he will often be baffled and perplexed to control a bleeding from an internal point, whose exact location is very obscure to him.

THE CIRCULAR EXCISION.

An English writer named Whitehead advocates the following plan: The patient being anæsthetized, is placed in a position much like that used in lithotomy. The sphincters are next forcibly dilated, and the operator proceeds to make the same dissection around the whole anus that Allingham does opposite each pile. Commencing in the groove or line that marks the junction of the skin and mucous membrane, he cuts through the integument completely around the anus following the line of junction. By the aid of forceps and fingers he then proceeds to separate the internal piles from the walls of the gut by a tearing and peeling process, carrying the peeling upward somewhat above the piles themselves, and cutting only when absolutely necessary. The tube of mucous membrane, with the piles attached, now hangs loose in the anus. The hæmorrhage being stopped, the next step is to clip off as much of the lower end of the mass of piles and membrane as can well be spared, taking pains that enough is left to come easily down and admit of being

sutured to the cut border of the skin below, without tension on the stitches. The stump of the mucous membrane is then carefully sewed to the edge of the external integument, using numerous stitches, and doing the work with care, because if union by first intention fails, the wound will draw asunder, and have to heal by granulation. This will produce a circle of cicatrix surrounding the anus, whose contraction will cause stricture.

The merits of this plan are, that by tearing the vessels off instead of cutting, a partial security against hæmorrhage is obtained, and the piles will be effectually cured around the whole circumference.

The objections are, that torn vessels sometimes bleed dangerously after the wound is closed and the surgeon is gone beyond immediate recall. This was the fatal defect which overthrew the once popular French method of removing piles with the ecraseur. It is not likely that the proposed plan will entirely obviate that danger, and, as we all know, a line of sutures through soft mucous membrane is no secure barrier to blood pushing forth under powerful arterial pressure. Furthermore, union by first intention will not always be secured. When it is not the edges of the wound will separate, a circular cicatrix will be formed, and its contraction will produce an anal stricture, such as we see when piles are snipped, or ligated too close to their bases, not leaving enough mucous membrane around the circle to form an elastic verge to the anus. The method has not been tried extensively enough in this country to allow of settling its merits by statistics, but the plan certainly provides no adequate security against the occasional occurrence

of hæmorrhage and stricture. All things considered, it is an operation of almost savage severity, and it ought not to be performed in ordinary cases, since milder methods have a certainty of success.

“POCKETS AND PAPILLÆ”

During the last two years the itinerants have added a new feature to their pathology and practice by adopting a supposed discovery recently promulgated. The itinerants did not invent the idea, but they have eagerly swallowed it to a man, because it opens up a new avenue of profit. The facts are these:

Just above the verge of the anus there is a series of little reticulated ridges, called by some anatomists *columnæ recti*, and by others the columns of Morgagni. The lower ends of these ridges are often connected one to another by a web of mucous membrane, making the little pockets figured and described by Allen and other anatomists, and sometimes called *sacculi Horneri*. In the same region, also, are a few papillæ, standing between the pouches. It is claimed that these “pockets and papillæ” are not natural organs, but “lesions” of terrible power, which must always be destroyed by an operation. It is asserted that these “lesions” cause or aggravate a very large portion of the more obstinate diseases of every part of the body, and that the patients are “almost always improved” by snipping off the papillæ and destroying the *sacculi*. The itinerants have rejoiced greatly at this “discovery.” They promptly added “pockets and papillæ” to their stock in trade, and are now snipping and splitting with renewed vigor throughout the whole Mississippi valley.

The anatomy of the organs referred to is given by various authors, both old and new, and we have been at the trouble to verify their descriptions and drawings, by new dissections of our own, assisted by Prof. Billings, of the Chicago Medical College. In a healthy rectum the mucous membrane just above the verge of the anus is traversed by minute branching ridges, enclosing slight concavities of varied shapes and sizes. If a healthy rectum from a cadaver be laid open and spread out after the rigor mortis is past, the ridges will be found to curve and interlace in all directions and to be only faintly visible, but if examined during life it will be seen that the action of the *sphincter ani* presses them together laterally, so that the ridges run in a more perpendicular direction, and receive the name of *columnæ recti*. The framework of these little ridges does not consist of mere folds of mucous membrane, as some authors state. They are reticulate bands of muscular and connective tissue, and the delicate mucous membrane, when healthy, can be made to glide freely over them.

These little columns are inserted at their lower extremities into the verge of the anus, and at that point one is often connected to its nearest fellows by webs of mucous membrane, making the "pockets" above mentioned, which were long ago named the *sacculi Horneri*, by anatomists, after the distinguished Dr. Horner. They are figured by various authors, and good illustrations may be seen in Smith's Anatom. Atlas, fig. 331, page 112; Esmarch's recent work on the rectum, and in Allen's Anatomy, plate 101. They are much less distinct in some persons than in others, but in all perfectly healthy rectums, where the

mucous membrane is normally thin and elastic, the lower ends of the grooves between the columns will show hollows, which sometimes are of considerable depth, but, even if shallow, a little traction with a blunt hook readily makes them assume the form of *sacculi* or "pockets," well adapted to deceive an examiner who is not aware of the elasticity of the membrane. In perfectly sound rectums the membrane covering the reticulated ridges and lining the hollows is exceedingly elastic and distensible, to allow of the requisite dilatation during the expulsion of the faecal mass. The *sacculi* and other hollows of the reticulated zone contain a reserve of tenaceous mucus, which is pressed out as the faeces descend, and lubricates the descending mass.

When carefully examined in healthy organs, the *sacculi* show no trace of disease, but are lined with a perfectly normal and beautifully delicate mucous membrane, which moves freely on the parts beneath, and stretches readily in any direction. The claim that they are "lesions" is simply absurd. However, these reservoirs of mucus, like the analagous pockets in the tonsils, occasionally become inflamed and even ulcerated, and then may

require clipping out, as was long ago stated by Henry H. Smith, of Philadelphia, as well as by the elder Gross, and by Ashhurst and others. Berry seeds and

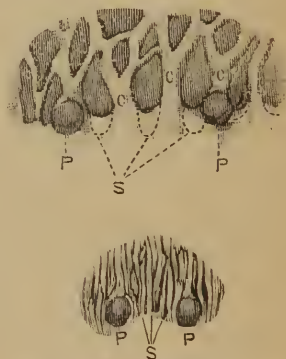


Fig. 17. Magnified 3 diameters, from dissections by the authors. The upper cut shows the reticulated arrangement under post-mortem relaxation. The lower cut shows the same parts compressed laterally by the contraction of the sphincter.

C. C. C. Columnæ recti.

S. Dotted curves, showing the position of *sacculi Horneri* between the bases of the columns.

P. P. Papillæ.

other small foreign bodies occasionally, but not often, lodge in them.

Between the lower ends of the grooves are frequently found a few papillæ, reminding one of the analogous *caruncule myrtiformes* of the vagina, though they are usually smaller. They show a healthy structure in most cases, and are supposed to be tactile organs, whose nerves communicate reflex impulses to the expulsory muscles engaged in defecation. These are the "fringes," or "papillæ," which, with the "pockets," furnish a large part of the present business done by itinerants.

Notwithstanding the frequent descriptions of these organs by eminent authors, it is claimed of the "pockets" that "no mention of them can be found in current literature," and very little in "that of the past." The following letter, from the distinguished Prof. Henry H. Smith, of Philadelphia, shows the error of the claim that the so-called "pockets" are not mentioned in current literature:

PHILADELPHIA, May 4, 1887.

Prof. E. Andrews:

DEAR SIR: "The rectal pouches" ("Sacculi Horneri") are a *normal* structure, intended to hold mucus, which is forced out in defecation, to lubricate the margin of the anus, and protect it from hardened feces. In 1792 Physick called attention to them (see American Encyclop. of Med. and Surg'y, article "Anus," by Coates; see also Smith's Operat'e Surg., Vol. II., p. 590, 1863), for the operation sometimes required. For their structure, see Horner's Special Anatomy, Vol. II., p. 46, 1851; see, also, American Jour. Med. Sciences, Vol. XVII., N. S., p. 410, 1849; Winslow (Vol. II., p. 149) described these pouches in 1749. In "Smith's Anatomical Atlas," published in 1844, by Lea, you

will find in figure 331, page 112, an accurate drawing of the "Sacculi Horneri," which I guarantee to be correct.

Truly yours,

HENRY H. SMITH."

To these references we may add the names of such works as Gross' System of Surgery, Ashhurst's Surgery, Allen's Anatomy, Kelsey on the Rectum and Anus, Curling on the Rectum, Esmarch, Die Krankheiten des Mastdarmes und des Afters, etc.

The writer whose conclusions we are controverting claims that these little healthy organs are actual diseases to be always removed by surgical operation. The following quotations will show the singular claims made by him about the "pockets and papillæ."

"They are as common as piles and more prolific of mischief than you would believe."

"When present they always occasion a spasmodic contraction of the *sphincter rim*."

"I am in favor of the removal of these pockets under all circumstances, and in all cases in which they are found."

"I look upon these conditions" (presence of pockets and papillæ) "as being the most mischievous of rectal disorders." * * * "Marked benefit almost invariably follows their removal."

"In all pathological conditions, surgical or medical, which linger persistently in spite of all efforts at removal, from the delicate derangements of brain-substance that induce insanity, and the various forms of neurasthenia, to the great variety of morbid changes repeatedly found in the coarser structures of the body, there will invariably be found more or less irritation of the rectum, or of the orifices of the sexual system, or both."

The real truth, as already stated, is this: The *sacculi Horneri* are not *lesions*, and usually do no harm, but, on the contrary, they, in conjunction with the adjacent grooves and concavities, hold the reserve of mucus required to lubricate the anus. But if they do become diseased, they may require removal, as advocated in 1863 by Prof. Henry H. Smith. It is also true that irritations so close to the verge of the anus are prone to disturb the nervous sympathies of distant parts of the body. One thing further is to be noted. The itinerants usually finish their snipping by a forced dilatation of the rectum. This sometimes benefits the patient, even if the snipping does not. The nerves surrounding the anus are, by the forced dilatation, so stretched as to alter their action, just as in Nussbaum's nerve-stretching operations in other parts of the body; hence benefit is sometimes secured, but caution must be exercised in the selection of cases. When the rectum is positively inflamed, it is often made worse by dilatation, as I have observed repeatedly in patients who have come to me after a trial of it in connection with the snipping of the "pockets and papillæ."

The methods and instruments used in the operation vary with the men. Those who have purchased the secret "Brinkerhoff System" use a small speculum with a slide covering a fenestrum on one side. By inserting it and drawing out the slide a small strip of the anal membrane is exposed. The "Rorick System" has a speculum closely like the "Brinkerhoff" and about equally inefficient. The operators use a blunt hook to insert into the *sacculi* and pull them down. Where the rectum is healthy, the hook can convert almost any of the concavities among the *columnæ* into temporary

"pockets" by the simple pressure and traction at the point touched, as the membrane yields surprisingly to the hook, so that it is not uncommon for the ignorant itinerant to deceive himself, and to suppose the infolding made by the blunt hook is a real "pocket lesion," or, in other words, a *sacculus Horneri*. This



Fig. 18. Pratt's modification of Sim's blunt hook.

blunder has led some of them to think that the blunt hook in some mysterious manner often loses its hold and slips out of the pocket after it has been inserted. To obviate this, they have invented a hook which is slightly sharp and barbed, to prevent the folded membrane from slipping off. Prof. Henry H. Smith and others advocate clipping diseased *sacculi* completely out, but the itinerants generally content themselves with splitting them down with a Sims' blunt-pointed uterine knife. The papillæ are seized with a tenaculum or forceps and clipped off. They often bleed somewhat at first, but we have not heard of any fatal

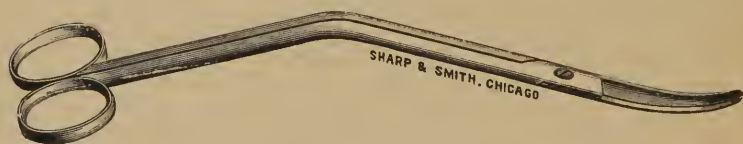


Fig. 19. Pratt's modification of Bozeman's scissors.

hæmorrhage from the clipping. Pratt has lately devised a large metallic ovoid bulb attached to a staff, to use instead of the fingers in forced dilatation of the anus. It will evidently work well in part of the cases, but as it cannot be made larger nor smaller, the use of such an instrument requires a considerable series of sizes to fit different cases. We think the use of the

fingers is better, as they admit of more delicate adaptation to the peculiarities of the case.

In quoting in this chapter the investigations of Kelsey, Pratt and Smith, on certain ideas of the itinerants, it should be distinctly understood, of course, that these writers are not themselves itinerants.

CHAPTER III.

ABSCESS AND SINUS; FISTULA IN ANO.

Suppuration in the cellular tissue, around the rectum, as well as in the walls of the intestine itself, and in the marginal region of the anus, is so frequent an occurrence that it may be said to be responsible for a large proportion of trouble about the anus. It may be doubted whether the experience of the profession at large would conform to that of Allingham, who found that two-thirds of all recorded rectal operations at St. Mark's Hospital, London, were cases of fistula in ano. It is quite likely that hæmorrhoids are a more common affection in the practice of most surgeons. Next in frequency, however, without doubt, would come the various forms of abscesses and their sequæ, sinuses and fistulæ.

Sinuses about this region are much more commonly presented to the surgeon than abscesses in the acute stage, and call for much more skill and patience in their treatment. Not every abscess in the vicinity of the anus necessarily produces a fistula. The fact must have come under the observation of all who have treated many cases of such troubles, that such collections of pus do often break or are opened externally, and heal as promptly as those in any other part of the body. On the other hand, many cases refuse to heal completely, and a sinus remains for months or years, which ultimately requires surgical interference for its removal. Early incisions into pus collections about the rectum undoubtedly tend to prevent the latter result.

Those superficial abscesses which sometimes form

at the anal margin have no tendency to produce fistulæ, and require no especial description. They are due in most cases to inflammation in some obstructed follicle or gland which has become irritated in the various movements of defecation, sitting, riding or walking. Suppuration in an inflamed hæmorrhoid may also cause small superficial abscesses. These minor forms should be treated like ordinary boils in other parts, by fomentations, anodynes, and early incisions.

Deep abscess at or near the rectum is a more common and more serious affection. The large amount of loose cellular tissue, especially behind the rectum, allows very large collections to accumulate before external pointing occurs; and as such abscesses sometimes connect with the bowel, they may be found distended by gas and fecal matter, and in a highly septic condition.

The causes of ischio-rectal abscesses are not always evident. The presence of foreign bodies in the rectum, the irritation produced by instruments such as syringes, or by falls, blows and other traumatic influences are often found to be exciting causes. Perhaps more often no direct history of injury is present, and the case must be classed as idiopathic. Extravasation of the intestinal contents through some ulcerated portion is supposed to be the cause in many instances. This, however, is largely a matter of conjecture, for it is not usually possible to determine whether the opening into the rectum is a cause or only an effect of the suppuration of the connective tissue outside of it. The tubercular element in causation seems to have as decided an influence in this as in other suppurative troubles. There is a marked tendency to the occurrence of ab-

scess and fistula in phthisical patients which has long been recognized, and which has given rise to some difference of opinion as to the propriety of operative measures in such cases.

The local symptoms which mark the formation of such abscesses, are œdema, pain and often a localized red spot to one side of the anus. Sometimes the abscess takes a horse-shoe form, and presents upon the skin, both sides of the anus, having half encircled the rectum upon its posterior side. Great tenderness and swelling accompanies deep abscess in this region, even before much redness appears externally.

Examination by the rectum reveals a thickening of the parts posteriorly, and upon one or both sides. This examination is often too painful to be borne by the patient. When fluctuation is detected by the finger in the bowel, and the abscess shows no sign of appearing externally, there is no impropriety in incising it through the rectal wall. Theoretically it would be much better to have such an opening externally only, but in practice an abscess opened by an internal incision will often heal kindly and promptly. As a rule, the swollen and œdematous condition of the parts about the anus gives an indication for early seeking the pus with the exploring needle or lancet externally. Too much importance cannot be attached to the necessity of early interference in order to anticipate extensive burrowing of the pus, perforation of the bowel, and the formation of extensive sinuses, and ultimately a fistula. It is well, therefore, to make early and deep incisions into the thickened and inflamed tissue, since when much œdema has occurred there is almost certainly pus present, and palliative measures result only in loss of time.

Abscesses properly drained and antiseptically dressed will quite frequently close in a week or two, without the formation of a fistula. The use of a drainage tube is necessary only in large abscesses, or in case the incision be small in size. The tube may be shortened from day to day, and removed finally within the first week.

FISTULA IN ANO.

Allingham reports 196 cases of abscess about the rectum, of which 151, or more than three-fourths, resulted finally in fistulæ. When once established, a fistula has no tendency to heal spontaneously, and may therefore be considered a suitable object in nearly all

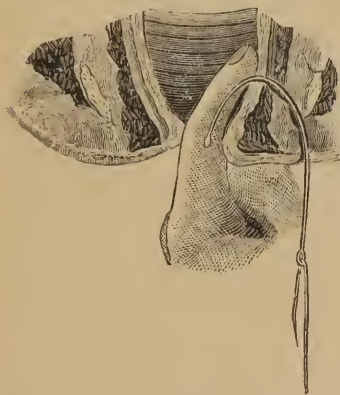


Fig. 20. FISTULA TRAVERSED BY PROBE.
[ESMARCH.]

cases for surgical interference. Properly speaking, a complete fistula is a sinus leading from within the rectum to an opening on the skin more or less remote from the anus. There are, however, cases in which the internal orifice, if any existed, has closed, or cannot be discovered by the probe. These are termed blind

external fistulæ. They require much the same treatment as those which are complete. A blind internal

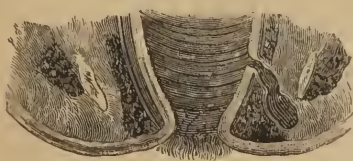


Fig. 21. INTERNAL INCOMPLETE FISTULA. [ESMARCH.]

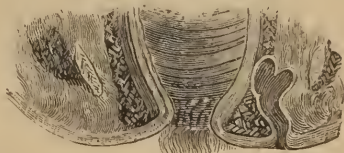


Fig. 22. EXTERNAL INCOMPLETE FISTULA. [ESMARCH.]

fistula is one which has an internal, but no external, opening. Such a sinus has a tendency to become a complete fistula by ulceration through the external integument. Occasionally cases will be met with in which there is a recurrence of acute abscesses which break externally, and heal for a time. These are often due to the existence of a blind internal fistulous tract, which becomes the receptacle of foreign substances from the bowel.

The causes of fistula have been mentioned under the head of abscess, the disease itself being but the chronic stage of that affection. Secondary sinuses or diverticula are usually present in old fistulæ. These add much to the difficulty of diagnosis, and to the severity of operative measures. A form to be noted is the "horse-shoe fistula," so called, in which the sinus surrounds the rectum upon its posterior half, and extends equally upon the two sides, thus undermining the cellular tissue for about one-half the circumference of the bowel.

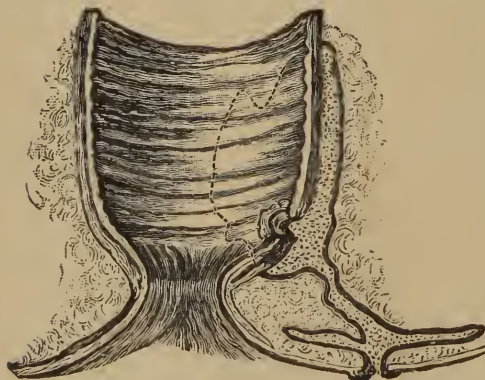


Fig. 23. SECTION OF "HORSE-SHOE FISTULA" WITH DIVERTICULA. FROM AUTHOR'S OBSERVATIONS.

The symptoms of fistula are not easily overlooked. Little pain is present, as a rule, the chief discomfort to the patient being the slight discharge which is kept up from the sinus as long as it remains unhealed. This

is not of itself sufficient to be exhausting, and does not

prevent or interfere with ordinary occupations, so that many patients have had fistulæ for years and been conscious of no serious ailment. The annoyance of the discharge is such that most persons are earnestly desirous of getting rid of the trouble, and are willing to undergo an operation for its removal. The diagnosis is only difficult in distinguishing different varieties. There can be no mistaking the general nature of the trouble when the parts are superficially examined. A urinary fistula is not infrequently taken for fistula in ano, and operated upon with, of course, no benefit to the patient. Much care should be taken to exclude these cases, and also those of deep pelvic or lumbar abscess, which sometimes point near the anus. The writer has frequently been called upon to examine cases of urinary fistula which had been divided, under the mistaken supposition that they were cases of fistula in ano. Urinary fistulæ may sometimes break into the bowel as well as externally. The diagnosis becomes in such cases more difficult, but the antecedent history of urethral stricture, or some urinary affection, will serve to clear up doubtful points.

The examination of a fistula is best made with the patient upon the side opposite the one affected, or in the lithotomy position. If a probe be passed into the sinus, and the left forefinger into the rectum, the latter may sometimes feel the point of the instrument projecting into the bowel at a point not far from the sphincter. More frequently, however, some difficulty is experienced in finding the internal opening, on account of the irregular character of the fistula and its numerous pouches (Fig. 23.) The opening is not usually at the highest point of the fistulous tract, but

is found most often between the two sphincters, within an inch of the orifice.

If the probe be carried to the extremity of the cavity and swept downward, pressing the wall of the gut between it and the forefinger in the rectum, it will often find the internal opening as it reaches this vicinity. In other cases, a slight protuberance, as of granulations, will indicate to the trained finger where to seek for this orifice. The expedient of injecting milk into the fistula, and watching for the point of its appearance through a spectulum, is often a valuable aid in the examination.

TREATMENT OF FISTULA.

Operative measures for the radical cure of fistula are, upon the whole, satisfactory and free from risk. The operation of dividing the sphincters and intervening tissues yields such good results as to leave little to be desired, unless some measures can be devised of superseding the use of the knife altogether. Of such measures we shall speak further on. When the cutting operation has been decided upon, the bowels should be emptied by laxatives or enemata, and the parts thoroughly cleansed and shaved. If an internal orifice exists, it is simply necessary to pass a director through this into the bowel, and bring the end out through the anus, after which the tissue upon the instrument is divided by a curved bistoury. Lateral sinuses and diverticula should now be laid freely open, where they do not extend too far from the anus, and the wound packed with iodoform gauze or lint, covered with antiseptic cerate. Vessels of much size should be ligatured. As a rule there is but little hæm-

orrhage. Those deep sinuses, which sometimes extend to far distant parts, as into the thigh or buttocks, cannot, of course, be laid open in their entire length. These will heal, however, after the division of the sphincter and the laying open of the principal sack or fistulous tract.

Fistulæ which have no internal opening, or in which it is supposed to exist, if at all, high up in the bowel, are to be treated by division of the lower inch of the rectum only. The point of the director in these cases must be thrust through wall of the rectum at a point not much over an inch from its external orifice, and the incision made as before directed when the internal opening already existed. The surgeon may rest confident that that part of the sinus above this limit will rapidly close after the division of the parts below, and at the same time be free from anxiety about cutting the peritoneum, which, in inflamed and prolapsed conditions of the rectum, may be tightly glued to the wall of the gut and brought somewhat nearer than normal to the anal orifice. In blind internal fistulæ

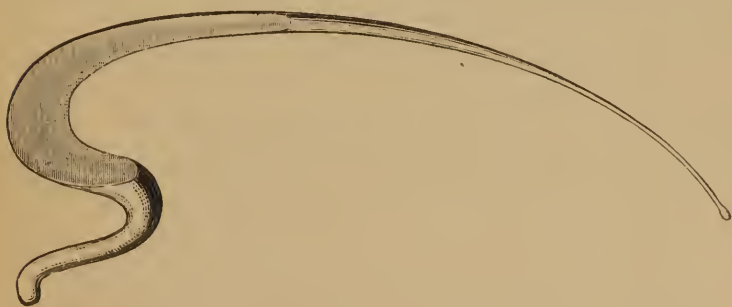


Fig. 25.—“Royal Bistoury” with which Chief Felix cured Louis XIV. [Esmarch.]

the reverse procedure is recommended, except that no director is usually needed, the sinus being divided downward and laid open with a curved, blunt bistoury

until the bottom of the cavity is reached and both sphincters are divided. Daily dressings are to be practiced until the granulations have lined the interior of the cut and all tendency to union of its walls has ceased. A probe should be swept through the cut so as to insure this, and the wound kept open by some form of lint or gauze, until healing from the bottom has taken place.

Hippocrates' Method. The use of the ligature, as advised by Hippocrates, has been revived from time to time, with the hope of avoiding operative measures. Hippocrates employed a cord into which horsehair was twisted. This was drawn through the sinus into the bowel, and the two ends tightened outside the anus. The possibility of thus curing a fistula by the gradual cutting through of a ligature is evident, and there may be cases in which the method would be less severe than that by incision. It is open to the objection that only simple sinuses can be managed in this way. Those fistulæ which have numerous diverticula would not be benefited by merely closing the main channel, as new abscesses would at once form.

Elastic ligatures have been tried with success in treating fistulæ by this method. They have the advantage of cutting more steadily and continuously, and also avoid to some extent the necessity for tightening the cord, which is a painful feature of daily recurrence with the inelastic ligature. On the whole, the method has little practical value, and in its present form is not likely to become a favorite one.

Itinerant Methods. The "traveling doctors," and the resident irregulars found in the cities, have developed sundry methods of treating fistulæ which,

though considerably varied in details, may be stated about as follows in general:

First, they explore the fistula with probes, some claiming advantage in a very flexible one. Then they smear the adjacent skin with an unguent, to protect it from the irritating applications employed. They then thoroughly inject every part of the fistula with a solution of hydrogen peroxide. This is put in either through a fine flexible catheter, or with a syringe having a flexible metal pipe. After the froth caused by the peroxide has mostly escaped, some take a mixture of equal parts of 95 per cent. carbolic acid, and of 10 per cent. solution of cocaine (probably using alcohol or glycerine to complete the solution), and inject ten or fifteen minims into the remotest parts of the fistula. Instead of this last formula "Brinkerhoff System" employs the following mixture under the name of "Ulcer Specific:"

R _y	Dist. ext. hamamelis	fl. 5v.
	Liq. fer. subsulph	fl. 5j.
	Acid carbol. cryst	gr. ij.
	Glycerinæ	fl. 5ij.

Misce. Signe. Inject ten or fifteen drops deeply into the fistula, and press the track of the fistula with the finger, to force the fluid more deeply in.

Many itinerants finish the operation two hours later by injecting the fistula with equal parts of oil of eucalyptus and glycerine, and putting the patient strictly to bed for two days.

It will be observed that every step in this treatment consists in the injection of some vigorous antiseptic. No disciple of Lister could fight it out on that line more persistently. A few of them prepare the fistula for injection by scratching or scarifying slightly the

interior with a probe carrying a jointed scratcher, which projects laterally from the tip and scratches as it is drawn out.

An excellent regular surgeon, Dr. Matthews, of Louisville, has systematized this latter plan, and made it more energetic. He dilates the external part of the fistula with a long laminaria tent, and then inserts Otis' urethrotome and both dilates and scarifies the interior, repeating the operation as often as needful. He does not speak of any antiseptic injection, but claims success in some twenty cases.

The truth is, that anal fistulæ have a natural tendency to recovery, and are held back from it mainly by two things:

1. The unfavorable effect of the undrained septic fluids within the sac.
2. The tightness of the external opening, which prevents free drainage, and keeps the sac distended with this putrid pus.

It is demonstrated by Dr. Matthews on the one hand, and by the experiments of the quacks on the other, that by controlling these two conditions, many cases will heal spontaneously. It follows that among the thousands of patients subjected to cutting operations by surgeons for this disease, there are many who might be cured by much milder means.

CHAPTER IV.

FISSURE, OR IRRITABLE ULCER OF THE ANUS.—RECTAL ULCERS.

This disease, so small and insignificant in appearance, causes the patient the most surprising and intolerable pain.

The first causes of these ulcers are disputed, but in all probability they are quite various. They may originate in cracks of the mucous membrane, produced by forcing out indurated fæcal masses. They occur in some cases from degeneration of the raw spots left by the removal of piles, and in other instances from ulceration caused by foreign bodies lodged in the *sacculi Horneri*. In short, any cause, constitutional or local, capable of causing ulcers in other parts, may affect the verge of the anus in the same way. The perplexing point is not the origin of the ulcers, but their astounding painfulness. Three causes combine to produce this result:

1. The verge of the anus, like the orifices of all other mucous canals is, even in its healthy state, extremely sensitive to painful impressions.

2. The sphincter, excited by the nerves of the diseased parts to spasmodic energy, grasps the ulcer very forcibly at every contraction.

3. The lower extremity of the fissure receives septic germs from the external air, which propagate putrescence in the secretions of the sore and give them the same virulently irritating quality, which putridity generates in the discharges of ulcers elsewhere. The

facility with which antiseptics often cure the fissures gives support to this explanation.

The symptoms and course of a fissure are as follows: The patient finds himself afflicted with a very severe, cutting pain, commencing either at the time of defecation or not long after. The dread of the suffering causes the patient to postpone evacuating the bowels as long as possible, which induces constipation and aggravates the disease. The sphincter is excited to spasmodic energy, and keeps up an iron grip on the parts. If the patient is laid on his side in a good light, with the knees drawn up, the surgeon will usually see a red prominence close to the verge of the anus, looking like a small pile. If he draw the mucous membrane away on either side, he will unfold a raw fissure or groove, running upward, which, on being spread



FIG. 26. FISSURE OF THE ANUS UNFOLDED.

out, presents itself as a small, oval ulcer from four to eight lines in length. A Sims' or Allingham's speculum assists the view. Allingham says that it is not uncommon to find a polypus either at the upper end of the ulcer or lying against it on the opposite wall of the rectum.

Fissures left to themselves are obstinately persistent.

TREATMENT.

A considerable proportion of fissures are curable without operation. The first thing is to expose the ulcer to view, and to blunt its sensibility by thoroughly wetting its surface and edges with an eight per cent. solution of cocaine, well brushed in with a camel's hair pencil. Allowing about five minutes to elapse, the

brushing should be repeated once or more times, so as to get a decided effect. The sore should now be again brushed with a solution of the kind given in this formula:

R	Corrosive sublimate.....	gr. j
	Cryst. carbolic acid.....	℥ ij.
	Hydrochlorate of morphia.....	gr. v.
	Water.....	fl.℥ iv.

Mix. S. Apply with a camel's hair pencil.

Next, dust or pack the fissure with dry iodoform, and place the patient, if possible, in bed. This dressing, if repeated once a day, will cure great numbers of cases. Carbolated iodoform ointment may be pressed into the fissure instead of iodoform, if preferred. Antiseptics of almost any kind, carefully placed in the cavity of the ulcer, will cure a great proportion of the cases. Kelsey favors a nightly application of Goulard's liniment, and also has cured many cases by touching the surface with a solution of nitrate of silver of the strength of five or ten grains to the ounce of water.

Allingham strongly advocates applying the following ointment several times a day:

R	Hyd. sub. chlor.....	gr. iv.
	Pulv. opii.....	gr. ij.
	Ext. belladon.....	gr. ij.
	Ung. sambuci.....	℥j.

Misce.

An ointment of the oxide of mercury, thirty grains to the ounce, has cured many.

The following plan is more energetic, and very commonly succeeds. First, anæsthetize the ulcer as before with applications of cocaine, then thoroughly

cauterize the whole floor of it with a stick of nitrate of silver, and fill the fissure with this ointment:

R.	Iodoform.....	5j.
	Belladonna ointment.....	3ss.
	Carbolic acid.....	gr. x.
	Simple cosmoline.....	3ss.

Mix.

Apply this ointment thoroughly every day, after having each time cleansed the sore with antiseptics, and repeat the nitrate of silver very gently every third day.

Many surgeons favor beginning the treatment by a forced dilation of the sphincter, but it is well to do so only after milder measures have failed.

Operative Treatment. The old plan used to be to make a deep incision along the floor of the ulcer, cutting entirely through the sphincter, and then to place the patient in bed and let the wound heal, simply with ordinary washes and cleanliness. The method rarely failed, but was unnecessarily severe. Of late years, operators content themselves with making two or three cuts the whole length of the ulcer, and going merely through the mucous membrane, but not dividing the sphincter. Any indurated edges are clipped away, and the floor of the ulcer is cauterized with nitric or chromic acid. Subsequent local treatment consists in the use of antiseptic washes and ointments. The plan rarely fails, but the patient needs ether or chloroform at the time of the operation. Some surgeons, and many itinerants, finish by forcibly dilating the sphincter, but it is not a necessity.

Itinerant Methods. The traveling doctor generally has either a long or a short circuit. The long circuit brings him back to the same place in four

weeks, and the short one in two weeks; hence he regulates his times of seeing patients by the time of his return, and not according to the patient's needs, leaving some *placebo* to occupy the attention between times. In this way the case is prolonged and kept on hand as a source of revenue, according to one of the little secret books, "from six to eighteen months," when it should be finished in one-tenth of that time.

The "Brinkerhoff System," as applied to fissures of the anus, is this: Once or twice a month, as the itinerant comes around on his circuit, he inserts his little speculum, cleans out the ulcer, and applies to it a solution of nitrate of silver, 40 grains to the ounce. Between the applications, the patient uses a morning and evening treatment himself. Each morning he is to evacuate the bowels, then inject the rectum with lukewarm water, and finally insert into it a little ointment, consisting of 3 grains of carbolic acid and 8 grains of sulphur to the ounce of vaseline or lard.

For evening treatment he uses "Brinkerhoff's Ulcer Remedy," having the following composition:

R Extract of hamamelis (distilled).... fl. ʒv.
 Solution of persulphate of iron..... " ʒj.
 Cryst. carbolic acid..... grs. ij.
 Glycerine..... fl. ʒij. m.

Add half a teaspoonful of this to the same quantity of starch, and about an ounce and a half water. Inject into the rectum every evening.

This "system" is gotten up for itinerants who are expected to be ignorant, and who cannot be trusted with edge-tools; it therefore sternly prohibits all cutting operations, and furnishes no instrument with which an incision can be made.

ULCERS SITUATED ABOVE THE ANUS.

When ulcers are situated high enough to be entirely above the anus, and expose no part of their length to the reception of septic germs from the atmosphere, they do not acquire the terrible irritability of true fissure. They are bathed in the bland rectal mucus, which itself is a decided antiseptic, and rarely become the seat of much pain, showing in that respect a wonderful contrast to the ulcers situated low enough to present one extremity to the external air.

Causes. The causes of the higher ulcers are similar to those producing ulceration elsewhere, such as foreign bodies, mechanical injuries, simple inflammation, as in dysentery, tuberculosis, syphilis, chancroid, sarcoma, true cancer, etc., etc. In the prison hospital of Saint Lazarre, in Paris, devoted to the treatment of diseased prostitutes, we were shown by the surgeon in charge numerous cases of chancroids of the anus and rectum, caused by the practice of sodomy, which is prevalent to a great extent in that city. This vice is so rare in the United States, except among immigrants from Southern Europe and from China, that rectal chancroids hardly exist among native Americans. We have met them a few times, however, in cases of recto-vaginal fistula, where the virus entered the rectum through the fistula. The ulcerations of tertiary syphilis are liable to attack the rectum as well as other parts, and not being dependent on contagion for their rectal location, they are not very uncommon in this country.

Clinical History. When simple ulcers of the rectum are of very recent origin, they are apt to be accompanied with pain, tenesmus, and symptoms of

dysentery, with discharges of blood, pus, and rectal mucus, as well as fæces. In chronic cases, these symptoms are mostly absent, though pus, yellow mucus and streaks of blood are found in small quantity. The proof of the ulceration is mainly obtained by examination with the finger and the speculum. If the ulcers are phagedenic, or large and multiple, they may occupy nearly or quite the entire circumference of the rectum, and in healing induce contraction and thus produce stricture. Most stricture originate in this way.

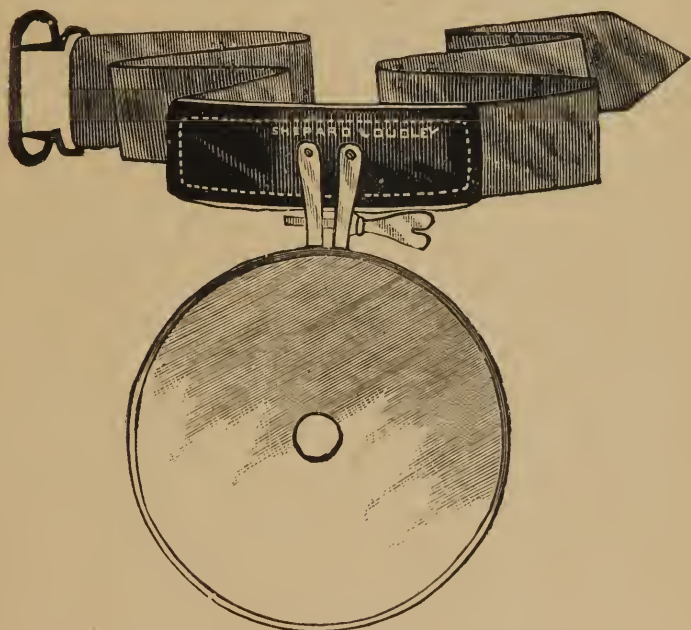


Fig. 27. Concave mirror to reflect condensed light into the rectum. The head band may be removed and a handle attached at pleasure.

Diagnosis. If pus is discharged from the anus, and the patient shows other signs of tertiary syphilis, and

if on examination one or more ulcers are found without other known cause, they may be presumed to be syphilitic. If the erosion exists on the surface of a tender and painful tumor, not seeming to be simply inflammatory, it will generally be found cancerous. The microscope will complete the diagnosis. If a tuberculous diathesis is present, or suspected, the microscopic search for the tubercle bacillus will assist the diagnosis, even if we do not accept the bacillus as a cause.

When we have to deal with simple ulceration well above the verge, the finger often helps to determine their size and location, but it is not sufficient for a full investigation. In these deep cases we need the tubular form of speculum, and frequently must etherize the patient, if we are to make a thorough search. The straight tube will generally reach far enough, but the curved one shown at page 6, Fig. 5, will enable one to carry the search still higher. For a thorough examination it is necessary to empty the rectum by an enema.

Treatment. When the ulcers are due to any constitutional disease, they will usually recover by simply curing the cause, without any local treatment; but if there is any local sepsis, or depraved quality of the intestinal secretions, direct applications become necessary. In either case a prolonged rest in bed is important. The great value of the horizontal position in hastening the cure is too much overlooked. "An hour's walking and standing around the sick room will undo more than the other twenty-three can gain." (Kelsey.)

The local medication is best made in the form of antiseptic washes and suppositories, of which nitrate of silver, two grains to the ounce, is a favorite. A large injection is thrown in and allowed to run out

again, after which a suppository, containing three grains of iodoform, five grains of subnitrate of bismuth and a tenth of a grain of morphine, may be inserted. The suppository may be used twice a day, but the injection only once in two days, and if it irritates it should be made weaker. It is well, however, to rinse out the rectum daily through a tube, with warm and slightly salted water containing one grain to the ounce of carbolic acid, taking care that the fluid runs well out again, lest too much carbolic acid be absorbed. When the ulcers are seen through the speculum they may be touched with nitric acid, nitrate of silver, comp. tinct. of iodine, or carbolic acid, but the speculum should not be inserted with irritating frequency.

The substance of the whole experience of surgeons is that simple ulcers ordinarily heal through cleansing and antiseptis. It is very different, however, if the ulcers are chancroids, or the result of tertiary syphilis, or tuberculosis.

Chancroids in the rectum, as before stated, are rare in this country. If discovered they will present the yellow, diphtheritic color of the floor, common to the species everywhere, which, with the history of the case, will enable one to make out the diagnosis. It is necessary to treat such cases by frequent applications through the speculum. To this end the rectum should first be emptied and antiseptically washed out. Then inserting the speculum, bring chancroids well into view, and first having brushed the rectum with a four per cent. solution of cocaine, cauterize them with a stick or glass brush dipped in fuming nitric acid. Rinse out the surplus of acid, remove the speculum and insert a suppository containing three grains of iodoform, five

grains of boric acid and a fifth of a grain of morphine. This should be repeated every second day, until the yellow color of the floor of the ulcer, disappears, and a rose tint takes its place, indicating that the virus of chancroid is no longer present, and the ulcers have become simple ones. During the treatment the rectum should be washed out three times a day with the same washes as were recommended above for simple ulcers, and when the nitric acid applications cease, the morphine may be omitted from the suppositories, unless great irritability exists. At any rate it must not be given a great length of time without an occasional week of omission, lest the opium habit be induced.

If tertiary syphilis exists, the case requires locally mere washes, like those directed for simple ulcers, but constitutionally it demands a vigorous administration of iodide of potassium or sodium by the stomach.

In tuberculous cases the local sores require ordinarily only washes like those used for simple ulcers, though, if tubercle exists in the ulcer itself, it may require to be scraped. Such cases, however, are more medical than surgical, and require the same general treatment as is given to other tuberculous patients.

When the ulcers are dependent upon the depraved condition of the system caused by Bright's disease of the kidneys, they will usually be incurable, but still the use of mild but free washings, will alleviate the local symptoms.

Whenever ulcers occupy a large portion of the circumference of the rectum, or anus, the contraction during their healing tends always to induce strictures, which can only be prevented by mechanical dilatation, a subject which we will consider fully in the section on strictures.

CHAPTER V.

PROLAPSE OF THE RECTUM.

There are three forms of rectal prolapse:

1. Prolapse of the mucous membrane alone, as represented in Fig. 28.

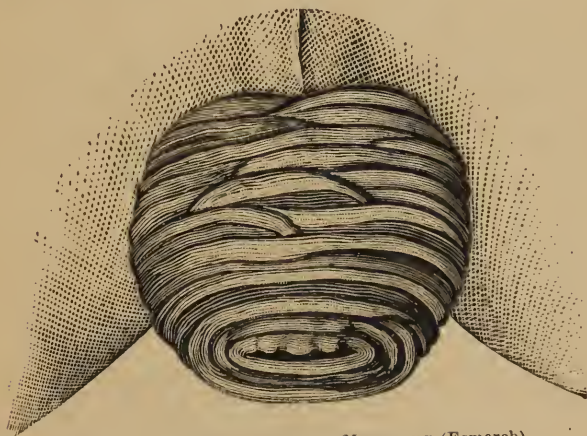


Fig. 28.—PROLAPSE OF MUCOUS MEMBRANE (Esmarch).

2. Prolapse of all the rectal coats. This variety brings down the peritonæum if the extrusion proceeds to some distance, as is shown in Fig. 29.

3. Prolapse of the upper part of the rectum into the lower, which is the same accident which is called invagination or intussusception in other parts of the canal.

Prolapse of the Mucous Membrane. This is the most frequent variety, and the majority of cases are in children under five years of age. The acute cases are generally in children, and are usually produced by

simple excess of straining at stool. The mucous membrane is very loosely attached to the parts beneath, and readily protrudes. Kelsey says the first attack always comes on gradually, but this is certainly an error, as it often occurs as a sudden accident in young children, who have had no sign of it before. Besides straining, we have for causes paralysis, excessive dilatation, and ulcerative destruction of the sphincter, or of any part of them.

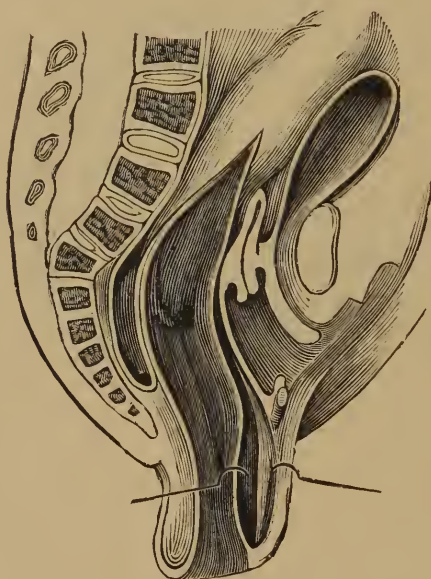


Fig. 29.—PROLAPSE OF ALL THE COATS (Esmarch).

When the attack comes on suddenly there is considerable pain, and a red and often bloody tumor is found projecting from the sphincter, which is sometimes reduced spontaneously, and at others has to be pressed back by the hand. Prolapse of the mucous membrane alone rarely projects more than two inches. If the tumor is longer than that, especially if it assumes

a cylindroid form, other coats of the intestine will be found present in the mass.

In a few cases we have the third form of this accident, where the upper part of the rectum projects into the lower, and even considerable lengths of intestine from above have been known to be invaginated and protrude through the anus. Mortification of the protruded part occasionally occurs, with the death of about half the patients.

Treatment. Whatever the form of the accident, efforts must be made to return the mass, which can usually be done without ether by first washing the parts with solution of cocaine, and then pressing them back with oiled hands. Persistence in taxis will almost always succeed. In many cases the patient will remain cured, if he refrains from straining; but where the bowel continually comes down, artificial supports must be used. These are constructed in two ways. In one a belt is placed around the waist, and an elastic band having a solid or inflated pad attached is passed between the thighs in such a way as to press the pad against the anus. The anterior part of the band is divided so as to come up to the belt in front on each side of the genitals. Another form consists of a belt, half steel and half leather, buckled about the hips just above the trochanters, while a bent steel spring passes down behind and carries a pad to press against the anus. In temporary cases, it assists the stability of the pad to draw the nates together with a broad adhesive plaster.

The bowel being returned, and provisions being made for the time being for retaining it, if needed, the surgeon must of course seek to correct every constitu-

tional or local disease tending to bring on the prolapse, and it is not necessary for us to enter extensively into that branch of the subject. Locally, astringent injections are of value, such as solutions of tannin and alum, sulphate or chloride of zinc, or of tincture of iron, using them at about the same strength as one would in the urethra; that is to say, we can use to each ounce of water, in most patients, fifteen grains of alum, two of tannin, of chloride of zinc, or of sulphate of zinc, varying according to the tolerance of the patients. As the rectum, absorbs readily, toxic substances cannot be used except in officinal doses. Astringent suppositories containing alum, morphine, extract belladonna and cocaine often help. Tannin is incompatible with morphine and cocaine.

Operative Treatment. When the prolapse is due to a rent in the perineum, or across the sphincter, or to a gap made by ulceration, it can be remedied by cutting away the cicatrized edges of the gap or rent, and closing them by sutures.

Where the case is a chronic protrusion from other causes, and ordinary corrective and palliative measures have failed of adequate effect, then energetic operative measures on the prolapsed tissue itself are justifiable. The direct amputation of the protruded mass is subject to two objections. First, the cicatrix left after the amputation is a ring completely surrounding the opening, and in its subsequent contraction is liable to result in stricture. Secondly, if the prolapse contains any fold of peritoneum, the opening of that sac would involve some danger, though the precautions of modern surgery can reduce the peril to moderate dimensions. It is also to be remembered that the pro

lapsed peritoneal pouch may be hernial, to the extent of containing ovaries, and coils of intestines, etc. For these reasons amputations are not to be resorted to except when special circumstances compel us to confront the danger. If the gravity of the case, however, makes the amputation necessary, it should be done with all the antiseptic precautions proper to intra-peritoneal surgery. The mucous membrane should first be divided, and all bleeding vessels tied. The muscular coat should next be treated in the same way. An opening should then be made in the peritoneum, the finger introduced, and the presence or absence of any hernial protrusion ascertained. If any viscera are down they are to be returned. The peritoneal coat is then to be divided, and sewed up with fine antiseptic animal ligatures, and the mucous and muscular coats closed over it in a similar manner. Some would, however, close the whole by antiseptic stitches going through all the coats at once, as in ordinary laparotomies. This is better than Kleberg's operation of tying the gut in two halves with rubber tubes. During the recovery and for months after dilatation must be used to prevent stricture.

The operations most in favor with the best surgeons are those which remove or destroy a part of the mucous membrane and skin near the verge of the anus.

Excision. The skin of the vicinity having been shaved and disinfected, the patient is anæsthetized and placed on his back, in a good light, with the knees drawn up and asunder, while the surgeon sits facing the perineum, as in lithotomy. The mucous membrane is then raised from the deeper parts by suitable toothed forceps or a tenaculum on one side, and

removed with the scissors, leaving a broad denuded oval patch or wound, longest in the direction of the axis of the rectum. If the skin participates in the tumor, a portion of that also is included in the lower angle of the wound. Another similar piece is taken on the opposite side. Some surgeons take several narrower longitudinal strips, but always leave enough mucous membrane to prevent serious stricture. Every bleeding vessel should be tied, and the wounds closed by sutures, otherwise dangerous hæmorrhage may occur. The patient should be then confined to bed for several days, with gentle compression upon the tumor, unless it has already retracted within the verge.

Some surgeons advise to clip out sections of the connective tissue and muscular coat with the mucous membrane, but if there is reason to think the mass contains a fold of peritoneum, this must be done with such caution as not to open that sac.

Cauterization. Owing to the dread of hæmorrhage, and the fear of wounding the peritoneum, many of the best surgeons prefer the actual cautery. The patient being anæsthetized and posed on the table as before, the cautery instrument, generally a narrow one, is applied, beginning near the upper part of the protrusion, and drawing it downward, going deeper and wider at the lower part, and terminating at the junction of the skin and mucous membrane. From three to six such stripes are burned. In bad cases, Allingham burns completely through the sphincter muscle itself at two opposite points, having previously reduced the protrusion. The contraction following the burns through the sphincter remedies the relaxed condition of that muscle, and enables it to hold up the parts above.

It is necessary, however, that the patient be kept in bed some three weeks, lest the cicatrices stretch out and leave too much laxity of the parts.

Potential Caутery. Owing to the horror felt by patients at the idea of being burned with hot irons, many have used the potential cautery, employing nitric acid, sulphuric acid, potassa, potassa cum calce, and chromic acid. These plans have not been favorites, owing to the difficulty of confining the caustics to the desired lines. This, however, is merely from want of due preparation. If the part to be destroyed is held in a trough-shaped clamp, in such a way as to conduct off the caustic fluids formed, and if the parts adjacent be adequately protected with folded napkin-cloth saturated with alkaline carbonates, in case acid caustics are used, or acid solutions if alkaline caustics are tried, the result to the patient will be practically the same as if the actual cautery had been employed, though the surgeon will have had a little more trouble with his preparations.

The Itinerant Treatment. The itinerants use small hypodermic injections of equal parts of an eight-grain solution of muriate of cocaine and phenol sodique, or other weak preparations of carbolic acid. They insert two or three drops at each puncture, and scatter the punctures about an inch apart over the surface of the tumor. They claim to cure in from one to three visits in most cases. "Brinkerhoff," however, advises his itinerants to let prolapsus alone, and says he can give them no method of treatment worthy of their attention.

Vidal, of France, used hypodermic injections of ergotine, with alleged success.

CHAPTER VI.

POLYPUS AND OTHER NON-MALIGNANT GROWTHS.

When a tumor is a mere hypertrophy of the normal elements of a mucous membrane and of the sub-mu-



Fig. 30.—CLUB-SHAPED POLYPUS, FROM PATIENT OF AUTHOR.

cous connective tissue, it is usual to call it a polypus. According to the relative amount of mucous glandular tissue, or of fibrous substance, the polypus is hard or soft. If the papillæ of the surface are multiplied and elongated they give it a hairy appearance. Others are knobby and wart-like to the look. Some are smooth, and others are granular in appearance from being covered with the follicles of Lieberkuhn, or with the hypertrophied closed follicles. Some are pedunculated, and others more sessile. In the rectum they are generally small, but have sometimes been found larger than an orange. Polypi are generally painless, but from special location in the grasp of the sphincter, or other causes, they may induce suffering. If they are of some size they can be generally found with the finger, but sometimes have to be sought through the speculum.



Fig. 31.—ROUNDED POLYPUS.

Treatment. Polypi are to be treated by removal. The only material danger is hemorrhage from the artery of the pedicle, though one death is on record from the wounding of the peritoneum. This was in the practice of the celebrated surgeon Brock. The patient died of peritonitis after the removal of a polypus, when it was found that it had originated in the sigmoid flexure, and had lengthened its pedicle down into the rectum, bringing with it a small tube of peritoneum



Fig. 32.—VILLOUS POLYPUS.

in the center of the pedicle. The best way is to ligate the pedicle close to the mucous membrane, and snip it off far enough outside the ligature to prevent the knot from slipping. Many twist them off, and "trust to luck" about the hemorrhage. Where there is nothing like a pedicle to be tied, resort may be had to the actual or potential cautery. Whatever method is adopted, the cure is usually permanent.

Itinerant Treatment. Brinkerhoff directs his itinerants to tie the pedicle close to the wall of the gut with waxed saddler's silk. Then, if the pedicle is long, they are to snip it off outside the knot. If it is short they leave the tumor in situ, put the patient to bed, and constipate the bowels for about three days, when they are to give a gentle cathartic.

Vegetations, Warts or Papillomata. These growths are hypertrophies of the papillæ of the skin, in fact a kind of external villous polypi, so to speak. They were formerly considered syphilitic growths, but at

present this idea is abandoned, though they generally occur on patients who have practiced venereal excesses.

In females they are to be found both on the anus and vulva at once. They consist of numerous little pedicles whose summits branch out and press against the branches of adjacent pedicles, so that the whole mass sometimes looks like a solid tumor on the surface, yet if scissors be run under so as to snip away all the pedicles, the skin is found beneath merely dotted pretty thickly with the small stumps.

Treatment. Vegetations may be sometimes destroyed by frequently dusting them with tannin and burnt alum, but generally the best way is to anæsthetize the patient and snip them away with scissors, using astringent lotions afterwards.

Condylomata. This term has been loosely applied both to certain elevated mucous patches of secondary syphilis, and to mere bunches of non-syphilitic skin about the anus. The syphilitic cases will disappear on using resolute antisiphilitic internal medication. The non-syphilitic varieties require the scissors if they are troublesome.

Fibrous, Fatty and Cartilaginous Tumors of the Anus and Rectum. These are rare. If they become troublesome, they must be removed by excision.

Cystic Tumors. These, if troublesome, must be dissected out, or else have their interiors cauterized with potassa cum calce. Iodine and nitric acid are not sufficiently energetic for the purpose.

CHAPTER VII.

MECHANICAL OBSTRUCTION OF THE RECTUM.

Mechanical obstruction may arise from stricture, from foreign bodies, from congenital malformation, from the pressure of adjacent tumors or displaced organs, from spasm of the sphincter, from large polypi or other benign growths in the rectum, and from malignant tumors.

Stricture. We mean by this term a non-congenital, or acquired narrowing of the passage. Probably a majority of the cases are due to phagedenic ulcers, some venereal, and others not, which first spread around the inner surface of the rectum and destroy the mucous membrane in an irregular band, nearly or quite around the circumference. As the ulcer grows older and heals, or attempts to do so, its cicatricial circle or cylinder contracts and narrows the passage. At first, little notice is taken of it by the patient, but at length he observes an increased difficulty in expelling solid feces, and discovers that they are thin or slender, as if driven through a small orifice, unless the obstruction is so high up that the fecal mass re-forms itself in the cavity between the stricture and the anus. If the destruction of mucous membrane does not extend entirely around the rectum, the symptoms of obstruction at length cease to increase, and the case may spontaneously improve by the dilatation of the uninjured portion of mucous membrane effected by the daily passage of feces. If, however, the ulcer is a complete cylinder, it may go on contracting until the stoppage is com-

plete, and the patient, if not relieved promptly, may die with the usual symptoms of mechanical obstruction of the bowels. When the obstruction has become so decided that the patient habitually fails to empty the bowels, the abdomen is usually found full and tympanitic. The portion of intestine just above the stricture becomes dilated, and frequently its muscular coat is hypertrophied from its constant straining, but at other times is thin from expansion. Ultimately the mucous membrane is prone to become inflamed and ulcerated, and sometimes is perforated, producing either cellular abscess, or fatal peritonitis, according to the site of the perforation. When there is no perforation there is often a low grade of chronic peritonitis with adhesions, pain on exertion, vomiting, etc. Even if no perforation or peritonitis ensues, death will follow a complete mechanical obstruction in a short time.

Examination. Preliminary to treatment, one must make a careful physical examination. Generally the finger will suffice, but not always. The rectum, having been emptied by enema, and the patient lying either on the side or back, the index finger is lubricated and inserted, and will generally reach the stricture. If the point can be carried through, one can determine whether the strictured portion is short, or whether it continues on for some distance. If the obstruction is beyond the reach of the finger, a rectal sound with a curved staff, with about six exchangeable bulbs of different sizes, will enable the surgeon to ascertain the size and location of the stricture. (See Fig. 8 on page 8). If it be very small, a britannia metal urethral sound may be required. The ordinary straight, stiff rectal bougies are useless here, and the flexible ones of

Wales' pattern are little better, as the position of the tips cannot be known on account of their flexibility, unless a steel staff be inserted through them. There are often difficulties in distinguishing a stricture from an obstructing rectal fold, but in such case great advantage is obtained by distending the gut with air, or with warm water, which smooths the folds away, and diminishes the perplexity. If the stricture is only a little beyond the finger, it is well to anæsthetize the patient and insert the whole hand of either the surgeon or a selected assistant. The hand should be narrow, well lubricated, and the fingers and thumb gathered into a cone, and slowly pushed through the sphincter. After passing the sphincter, the force used must be very moderate, as the destruction of the elasticity and strength of the walls of the gut by the disease, give a possibility of tearing through into the peritoneal cavity, an accident which has occurred more than once.

Treatment. Constitutional treatment may be required to remove whatever unfavorable diathesis be present, especially the syphilitic, and in partial stricture, on which no operation is at present intended, it is often necessary to use laxatives, to keep the feces in a semi-fluid condition, as well as tonics and proper regimen to sustain the patient. Medical treatment alone will rarely cure the stricture itself, however, except in a few of the syphilitic cases, and those pseudo-strictures which consist merely in spasmodic action of the sphincters.

The operative treatment consists in dilatation, division, and incision both internal and external, to which may be added colotomy.

Dilatation. This is generally commenced by gently

inserting one or more fingers, if the stricture is within reach, and repeating the process at intervals of two to six days. The parts should be benumbed with cocaine a few minutes beforehand, the finger well lubricated, and slowly inserted. When the orifice becomes too large to be further distended by the finger, some conical rectal bougie is to be employed, of which Wales' rubber instruments are the best now in market. These are to be inserted very slowly, increasing the size gradually, so as neither to overcome the patient's fortitude, nor to risk bursting through into the peritoneal cavity. Mechanically speaking, any stricture within safe reach can be gradually dilated to any desired size, exactly as is done with the strictures of the urethra, but the greater size of the rectum, and its more overpowering nervous sympathies, render it much more difficult to maintain the fortitude and tolerance of the patient at a working standard. Still, by gentleness, encouragement and patience, great results can often be obtained by the gradual method. It is claimed that a rapid dilatation can be obtained by electricity passed through a metallic bougie pressing into the stricture, just as is done in the urethra, but we have not personally tried it.

Wales and Davison have each devised dilators, consisting of elongated rubber sacs, which are inserted into the stricture in the empty condition, and then made to expand by forcing in air or warm water. Very good results can be obtained by the use of them.

Divulsion. When the stricture is well below the peritoneal folds,—that is to say, within an inch of the verge,—it can be rent open by force, provided the

vagina in the female, or the urethra in the male, are not involved in the substance of the induration.

In performing this operation, the patient is anæsthetized, and the usual method is either to nick the inner edge of the stricture in several places with the bistoury, or as is the better way, nick in one place only and that directly backwards toward the sacrum, so as to guide the rupture in a direction where there are few vessels, and no peritoneum.

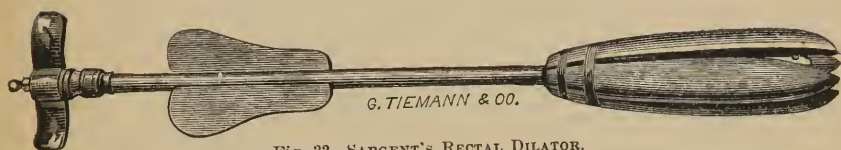


Fig. 33—SARGENT'S RECTAL DILATOR.

The divulsion may be made by the fingers, by conical rectal bougies, or by any of the mechanical divulsors invented for that purpose, of which there are several. We generally restrict ourselves to the fingers, and to Wales' rubber bougies, preferring them to the weapons of steel. The proper cases for divulsion are those where the patient's fortitude is not persistent enough for gradual dilatation, or when other circumstances compel haste, and at the same time the stricture is quite near the anus. The sole advantage of the method is that there is less danger of hemorrhage than in cutting. When the stricture is situated much more than an inch above the verge, the danger of tearing into the peritoneum begins, and divulsion is then correspondingly dangerous. In such cases it is to be avoided unless some urgent reason exists for braving the peril. In old and debilitated patients there is some danger of shock after divulsion, and deaths sometimes occur.

External Incision, or External Proctotomy. In some cases where both dilatation and divulsion are unadvisable, we must either put the patient to a little risk of a smart hæmorrhage, or else relieve him by the rather undesirable operation of colotomy, or operate by cautery. When proctotomy is done with the cold knife, the method is as follows: The rectum being emptied and the anus shaved, the patient is anæsthetized and placed either in the lithotomy position, or on his right side with the knees drawn up. The left index finger is oiled and inserted up to the stricture with the palmar surface toward the sacrum. A straight probe-pointed bistoury is then made to glide along the finger and through the stricture, if the latter is low down, or only to it, if higher up. The knife is then swept backward along the mesial line until the heel comes close to the point of the coccyx, while the point rests on the finger in the rectum. A free gush of blood follows, but the wound can be easily spread wide open and the bleeding vessels secured. Then, if the stricture is not already cut, the knife is passed into it and cut backward into the wound already made. The wound is then tightly packed with lint and the patient sent to bed, using opiates if needed.

The dread of hæmorrhage has caused improvements to be devised. The incision may be made from without inwards, by the galvano-cautery knife, and most of the danger of hæmorrhage avoided. A third method is to insert a trocar into the skin below the tip of the coccyx, and push it straight to the end of the finger inserted as before said into the rectum. Withdrawing the steel, and leaving the canula in

place, a platinum wire is carried into the rectum and brought out of the anus. The canula is drawn out, the ends of the wire connected with the battery, and the loop is made slowly to burn its way outward by gentle traction upon it. A fourth plan is to insert the trochar as before, carry the chain of an ecraseur through the canula and out the anus, and attaching the chain to the instrument, crush the tissues through in the usual manner. A fifth plan is to grasp the tissues in the curved jaws of the ecraseur-forceps of our invention, and divide them in that way. The ecraseur methods, however, are not as safe from risk of hæmorrhage as the galvano-cautery.

Internal Incision, or Internal Proctotomy. This is performed by dividing the stricture internally, directly backwards toward the sacrum, and sometimes, also, but with care, directly forwards a moderate distance.

Lumbar Colotomy. If the condition of the rectum is such that no operation of reasonable safety can restore the natural route of the feces, it is necessary to perform left lumbar colotomy, which is done in accordance with the usual directions on that subject in all surgical text books. A description of the operation will be given in the chapter on Malignant Tumors.

Obstruction from Foreign Bodies. Foreign bodies occasionally obstruct the rectum. Thus, a farmer in Michigan fell upon a blunt stake of half-decayed wood, which entered the anus some distance and broke off, leaving the fragment in the interior. It was extracted, and the patient recovered.

A laboring man, accustomed to bolt his meals with great rapidity, presented himself, with obstruction

and sharp, cutting pains of the rectum. Nothing was visible to external inspection, but the finger being introduced, discovered a large, jagged piece of mutton bone lying crosswise just above the verge.

In another case, a crushing fracture of the pelvis dislodged a large flake of bone, and drove it into the rectum two inches above the anus.

A case is on record where a man suffered such violent pain from the presence of stone in the bladder, that, in his desperation, he seized a large, jagged stone, five inches long, and forcibly thrust it into his rectum completely above the sphincter.

Various slender but elongated objects, such as nails, needles, fish bones, chicken bones, splinters of wood, etc., may make their way without difficulty downward until they land crosswise above the sphincter, when trouble and obstruction for the first time ensue. In such cases there may be some dexterity required to extract the foreign bodies with the least irritation, but no formidable difficulty occurs. The foreign object can usually be turned so as to bring it down easily; but if not, it may be necessary to cut it in pieces with bone pliers, or even to incise the border of the anus to remove it.

Benign Tumors in the Rectum. Polypi and other benign growths sometimes become so large as to obstruct the canal. In these cases they must be removed by the measures already described under the head of "Polypus," or if the situation renders that impossible, then a lumbar colotomy may be required.

The malignant tumors will be discussed under a separate head.

Obstruction by Displaced Organs. Frequently a

retro-flexed or retroverted fundus of the uterus presses upon the rectum sufficiently to make a partial obstruction. Similarly the descent of enlarged ovaries, coils of intestines, etc., into the sac of a hernia alongside the rectum may cause material embarrassment in its functions. The only cure is to replace the wandering organs where they belong.

Pressure of Tumors and Swellings Outside the Rectum. Fibrous, cartilaginous, and bony tumors of the pelvis sometimes obstruct the rectum. Cartilaginous growths especially may fill the entire cavity, and make a very great obstruction. In some cases these obstacles can be removed by carefully planned operations, which will have a better hope of success if done early. Sometimes the form and location of the growth admits of a complete operative success in relieving the rectum, even when the whole tumor cannot be removed. The excision of some projecting edge or angle may be all that is needed. If, however, the obstruction goes on increasing, and becomes so nearly total as to threaten the destruction of the patient's health, or life, lumbar colotomy must be performed. There is a prevalent opinion among physicians that an artificial anus is a terrible thing, and not much preferable to death. This is an exaggerated view. True, an artificial anus is a source of some inconvenience, yet by the exercise of a little care and ingenuity, these inconveniences are greatly relieved, and the patient may make his life very comfortable to himself and agreeable to his friends.

Inflammatory swellings may so press upon the rectum as to impede the evacuations. They rarely effect a complete obstruction. If they should do so, it will usually be found that an abscess is present

which must be evacuated, when the obstruction will disappear. A solid inflammatory swelling must be managed by antiphlogistic and anti-suppurative treatment just as in other parts of the body. We never knew one to produce complete stoppage, but if it should occur, a temporary artificial anus might become necessary.

Spasmodic Contraction of the Sphincter. This is usually caused by fissures of the anus, or other irritations in the vicinity. It does not amount to complete obstruction, yet it may induce constipation. Usually the treatment consists merely in the cure of the fissure, or other local cause, but sometime a forced dilatation is also useful.

CHAPTER VIII.

MALIGNANT TUMORS OF THE ANUS AND RECTUM.

These, as in other parts of the body, may be carcinomas or sarcomas. The carcinomas are the most numerous of the two in this locality, but whatever their relative frequency, many authors, including Cripps and Kelsey, include both under the general term cancer, while others apply that name only to the carcinomas. The sarcomas are rare in this location, but deport themselves when found much as they do elsewhere.

The etiology of both forms of malignant disease is unknown. Much has been said about a hereditary tendency to cancer. We published some years ago statistics of inquiries into the ancestry of one hundred cancer patients, showing that they had almost exactly the same amount of that disease among their parents and grandparents as prevails on the average among the adults of the whole community. About the same time, Mr. Harrison Cripps, of London, showed that the parents of cancer patients in St. Bartholomew's Hospital had the same average amount of cancer among them as is found among the adults of the whole English people, according to the statistics of the Registrar General. This seems to dispose of the whole theory of hereditary transmission of cancer, whether in the rectum, or elsewhere. Turning to other causes, we find that the statistics of the United States Census Bureau show a clear relation between cancer and climate, as we have elsewhere proven by collating the

figures of three successive decennial censuses. It is clear, that in this country cancer prevails most near the sea, and least at a distance from it; also, that at equal distances from the sea, it abounds decidedly more at the north than at the south. What this peculiar influence is, which is found prevailing at the north, and near the sea, is utterly unknown. The clinical phenomena constantly suggest that it is a microbe introduced into the body from without, but if it exists it has not yet been identified. At present we must be content with our ignorance. The advocates of the microbe theory point out, in support of that opinion, the undeniable fact that cancer of the rectum is most frequent near the outlet, and diminishes as we go upward, as if it had its origin in some germ entering the parts from external sources,—a fact of considerable weight, though not decisive, of the question. Mr. Cripps has given in his valuable work a very careful discussion of the etiology of rectal cancer, and supports the same view.—(“Cripp’s on the Rectum,” p. 315.)

Carcinoma of the rectum often spreads in a flat stratum between the mucous membrane and the sphincter, where it feels somewhat as if a foreign body had gotten itself bedded in the tissues, but in other cases it is a more rounded or irregular mass. In either case, it gradually extends, infects the mesenteric glands and the liver, and, in short, destroys the life, like any other carcinoma. Occasionally we see the colloid forms, as in the upper viscera.

In the majority of cases ulceration of the surface takes place, but not rapidly enough to prevent the increase of the size of the mass, so that in many instances complete obstruction of the rectum occurs. The

pathology of the disease is very interesting, but our limits do not permit entering upon it. We can only refer the reader to an admirable discussion of the subject in "Cripps on the Diseases of the Rectum," pp. 288 to 370.

Diagnosis. Except in very early stages it is not usually difficult to distinguish rectal cancer from other growths. If, however, there is ground of doubt, the location is such that it is easy to excise a sample, and subject it to microscopic examination. The fungous form of cancer might be taken for an innocent villous growth by one unaccustomed to distinguish them. However, the following characters will guide one generally to a correct conclusion: Villous innocent growths are usually pedunculated; cancers rarely so. Villous tumors, unless ulcerated, are bathed in healthy, transparent mucus; cancers discharge offensive, dirty-looking matter, which is neither mucus nor healthy pus. Villous tumors are soft, but yet somewhat tough; while the fungous cancer, though somewhat soft, is less so, and yet breaks readily under the finger nail, and easily bleeds. The villous tumor springs from a soft, healthy mucous membrane, which glides freely on the deeper coats; while the cancerous fungus grows from an indurated lump, or patch, in the bowel, which seems fixed or rigid.

In suspected rectal tumors, where the diagnosis is doubtful, a small specimen should be taken for microscopic examination, and if the case is truly malignant, the typical structure of carcinoma, or of sarcoma, will usually be found by a competent microscopist. The situation renders it easy to excise a sample. If the village practitioner be not skilled in microscopic path-

ology, he can place the sample in a vial of alcohol, and send it to a competent pathologist in some larger town.

Treatment. This may aim at a radical cure, or at simple palliation. The radical cure consists in the complete extirpation of the tumor, and of a stratum of apparently sound tissue around it. Numerous variations have been devised in the details, but the following description will give the plans mainly adopted by the best surgeons, among whom Volkmann has perhaps given the most systematic account:

1. When the tumor occupies a circumscribed spot only on the circumference of the lower rectum, or of the anus, we first make a thorough dilatation of the anus, and then boldly excise the tumor, cutting far enough from it to take away all the diseased tissue. If the tumor is somewhat high up, we pull it down with vulsellum forceps, and if the dilatation of the anus does not sufficiently expose it, we take a bistoury or scalpel and divide the posterior margin straight back to the coccyx. After the removal of the growth we study the form and dimensions of the wound, and so far as its extent will permit, close it with sutures, and guard it from serous infiltration by drainage tubes.

2. In some cases the tumor involves the entire circumference of the rectum, but has not infected the anus. We then divide the sphincter backward to the coccyx, and also forward into the perineal region. The posterior incision goes deepest. Drawing the two halves of the anus asunder, the growth is taken out, and the gap is filled by drawing down the mucous membrane and stitching it to the cut margin below. The two halves of the sphincter are next closed with deep

sutures, and a drainage tube inserted into the posterior seam.

3. In other cases the growth not only occupies most or all of the circumference of the rectum, but the anus also. We then proceed as follows: Dividing the anus behind and before, as already mentioned, we commence outside the line of disease, and dissect upward outside the gut until we get above the cancer. If a hole should be cut into the peritoneum, it is plugged with a well carbolized sponge. The rectum is next cut off, the tumor removed, and all bleeding vessels secured. Next, the opening in the peritoneum is sewed up, and if the bowel will yield to tension, it is drawn down and stitched to parts below. However, this cannot always be done.

The operation is a bloody one in spite of all care, and every preparation must be made for promptly arresting hæmorrhage.

The French surgeons have used the *ecraseur* instead of the knife to divide the tissues, thus diminishing the risk of hæmorrhage, but probably increasing the shock. Cripps devised an ingenious method of making a strong whip-cord do service in dividing the tissues, instead of the chain of the *ecraseur*. The platinum wire of the galvanic cautery, and the galvano-cautery knife are used with excellent effect to avoid hæmorrhage. Verneuil, of Paris, uses both the *ecraseur* and the galvano-cautery knife in the same operation. The *ecraseur*-forceps of our own devising is more convenient of application than the chain *ecraseur*. It is sometimes necessary to excise the coccyx and a little of the sacrum to enable one to reach the rectum at a sufficiently high point.

The mortality of the high operations is pretty heavy, but that of the low ones less so. The peritoneum, though variable comes down on the average pretty near to the highest point which can be reached by the index finger, and this point is called by Kelsey the "danger line."

Taking all cases together, we have the following table:

Authority.	Total Cases.	Died of Operation.	Disease Known to have Returned.	Disease not returned at times from a few months to three years.
Cripp's Collection...	64	11	20	34
Allingham.....	13	0	13	0
Billroth	Not stated.	13	Not stated.	0

These statistics are imperfect, and therefore unsatisfactory, but they show at any rate that some cases are permanently cured.

Dieffenbach claimed thirty cases permanently cured, but in his day the means of accurate diagnosis of carcinoma did not exist, and the correctness of his statistics is more than doubted.

Sarcoma of the Anus and Rectum. The diagnosis from carcinoma must be made, if at all, by the microscope. Its early removal is as urgent as that of carcinoma, and its prospect of success is much better.

Palliative Operations. Malignant tumors are prone to block up the anus and produce first a stricture, and gradually a total obstruction; hence, in cases too far gone to admit of excision, we must combat the occlusion. As the stricture comes on gradually, it can usually be overcome by inserting from time to time a

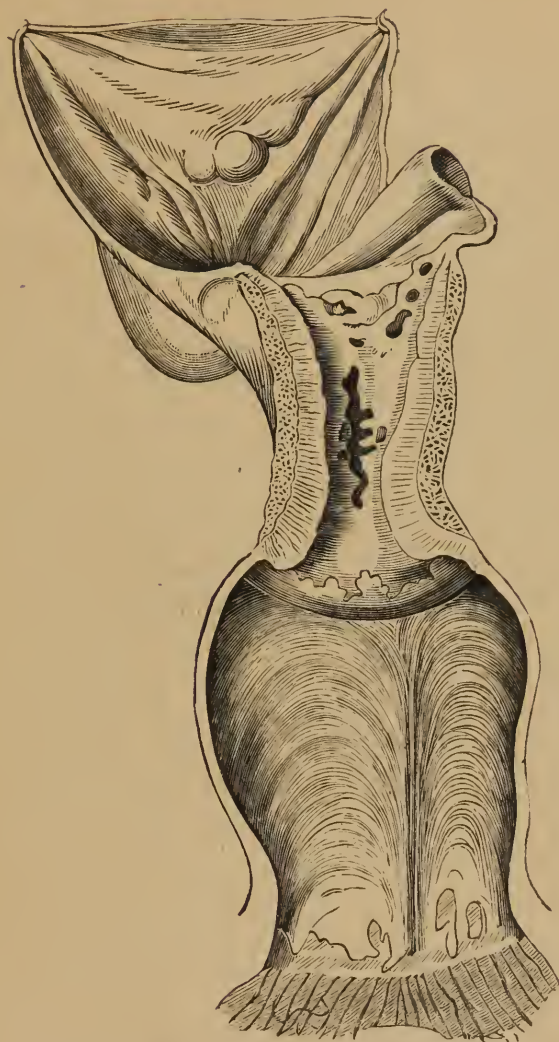


Fig. 34.—CANCEROUS STRICTURE OF THE RECTUM (Esmarch).

conical rectal bougie, giving an anæsthetic if necessary. This ruptures the obstructing belt, and gives renewed ease each time. In some cases it is justifiable to scoop

away some of the mass with the curette. If the obstruction has become nearly complete and extends so high that it cannot be locally mastered, we must resort to left lumbar colotomy, which relieves the distress and obviates the immediate danger. In short, it enables the patient to evacuate the bowels in comfort as long as the disease in other parts permits him to live. As the disease progresses, anodynes may be used according to the necessity.

Colotomy for Cancerous Occlusion of the Rectum. Some writers have tried to introduce the polyglot word "Colostomy," so as to get in the Latin word *os*, a mouth, between the two Greek elements *colo* and *tomy*, intending apparently to express the idea of cutting the colon to make a mouth. Aside from the absurdity of calling an anus a mouth, it is bad literary usage to mix two languages in coining a new compound term. The only way to make a correct Greek derivative for this absurd purpose would be to say "Colostomatomy," but this would be an intolerably long and harsh word. After all, there is no need of lugging in a Greek or Latin root to express the motive of the operator in making the incision. Colotomy sufficiently indicates the operation itself.

In all ordinary cases, the opening in the left lumbar region behind the peritoneum, is to be preferred. This is sometimes called left lumbar colotomy, or Calliseu's operation. Its merit is that it does not open the peritoneal cavity, and this is very important, for in spite of glib assertions to the contrary, careful surgeons know very well that antiseptic precautions have only lessened, but not abolished, the dangers of laparotomy.

The method of procedure is as follows: The skin

of the left lumbar region should be scrubbed with an antiseptic solution several times during the thirty-six hours preceding the operation, and during the last six hours should be kept moistened with the same. The patient is anæsthetized and laid on a table in a good light. At this point some writers have recommended to distend the bowel by injecting air into the anus, so as to make the colon larger and easier to find. The grimness of this joke will be obvious if we consider that the anus in these cases is closed by the cancer so effectually that neither air, nor anything else, can be gotten through. However, there is little need of clysters. The bowels are usually well distended already with their retained contents.

The patient being laid with the right side down and a cushion under the loin, the surgeon proceeds to ascertain the position of the descending colon. The area, or field of operation, is bounded above by the last rib, below by the crest of the ilium, behind by the longissimus dorsi, and the common mass of the *erectores spinæ* muscles, and in front by a perpendicular line carried upward from the center of the crest of the ilium. In this quadrangle lies the descending colon with its axis about half an inch posterior to the vertical line drawn upward from the center of the crest of the ilium. The center of the crest is best found by running a line from the anterior to the posterior spinous process, and erecting a vertical one from its center. Mark the position of the axis of the intestine, as above ascertained. Now make an incision through the skin about four and a half inches long, whose center shall cross the line marking the axis of the gut. The incision should be oblique, passing downward and forward in the same

direction that a rib might be supposed to assume if one existed at that level, and should be about half way between the last rib and the crest of the ilium. This direction, however, is not imperative. If special circumstances require, it can perpendicular or transverse. Dissecting carefully down, the latissimus dorsi, the thick border of common mass of spinal muscles and the anterior edge of the quadratus lumborum will come to view, and external to them the external oblique muscles and its fascial origin. Divide the fasciæ and the external oblique muscle on a grooved director, and also the anterior or external border of the quadratus lumborum. That portion of the gut not covered by peritoneum, lies under the border of the quadratus. The loose fat connected with the colon and kidney is now exposed, unless it has been removed by emaciation. Displace the fat by the finger and the gut will come to view, and may be recognized by its large size, its greenish color, the presence of one of the longitudinal muscular bands and its tendency to sacculation of the walls. Now at a point three-quarters of an inch in front of the perpendicular axial line of the gut, pass a semicircular needle through the skin of one edge of the wound down into the gut and thence out again about half an inch from the point of entrance, and out through the skin of the other edge of the wound, and drawn after it a stout ligature. Repeat this process behind the axial line, and by these loops raise the gut up into the wound. Next, incise the gut parallel to the incision in the skin nearly from one loop to the other. A blunt hook will now easily draw out the loops from the inside of the gut, and by dividing them, four ligatures are at once produced, wherewith to tie

the cut edges of the intestine to the skin. A few more stitches are required to support adjacent parts.

After the surplus contents of the intestine have escaped, the wound can be dressed with oakum, or any other porous antiseptic absorbent. The stitches should remain until, by their looseness, they show that they are no longer useful.

CHAPTER IX.

MALFORMATIONS OF THE RECTUM—
PRURITUS ANI.

Children are occasionally born with no outlet to the bowel. In some instances the obstruction is merely a thin membrane across the anus, through which the

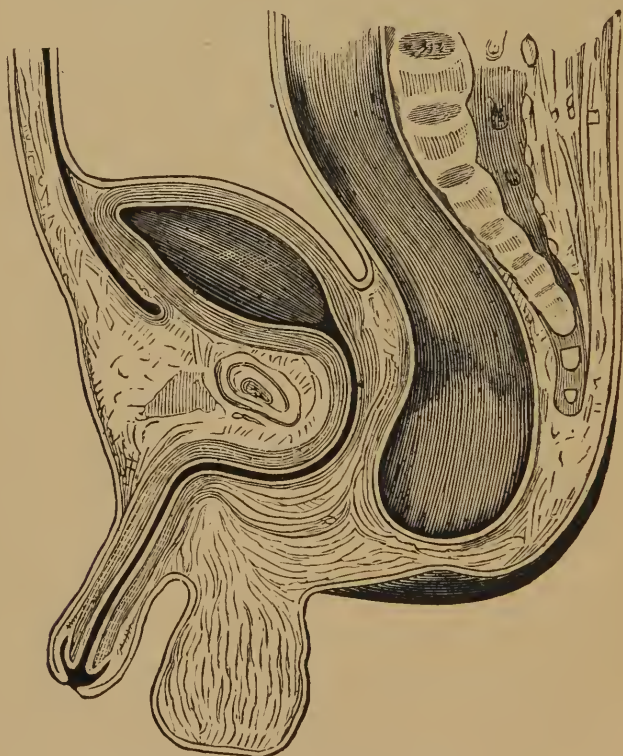


Fig. 35.—IMPERFORATE ANUS (Esmarch).

dark shade of the meconium shows. In other instances the anus and lower rectum is perfect, but there is a

septum higher up. In other cases the whole rectum is wanting, and even some portion of the colon. There are also instances where the rectum ends in the vagina or in the bladder.

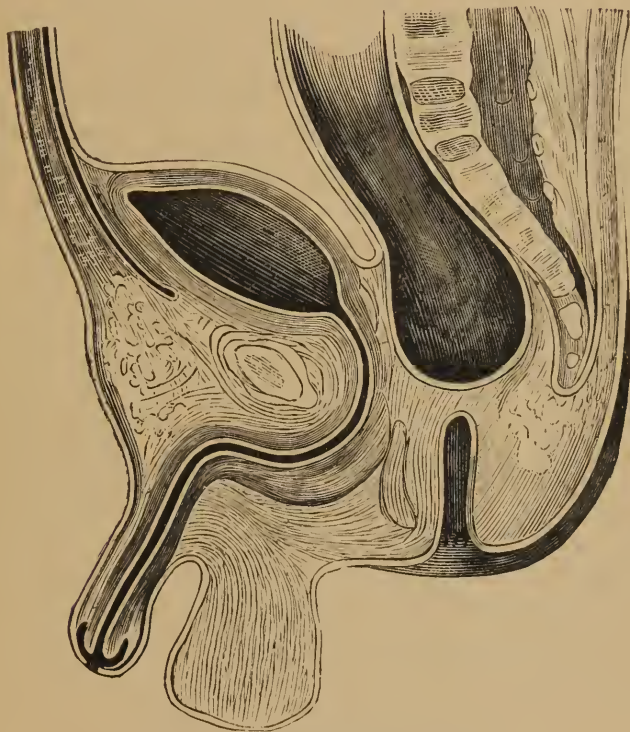


Fig. 36.—IMPERFORATE RECTUM (Esmarch).

Treatment. Where there is only a thin membrane closing the anus, it is easy to divide it by a crucial incision, and cure the patient.

If the rectum stops higher up, then we are in doubt as to where the *cul de sac* is to be found. It is proper, however, to seek for it. The patient being anæsthetized, an incision is made from the center of the spot where the anus should be, directly back to the tip of

the coccyx. If the *cul de sac* of the gut is there at all it will be in or below the hollow of the sacrum. The incision is therefore cautiously made on the middle line, close to the sacrum, and, if needful, the coccyx may be excised to enable the operator to get higher up. The gut is felt for with the finger, and if found is opened, and if possible drawn down and stitched to the incision as near to the normal location of the anus as its extensibility will permit without much tension. In this blind search one feels very uneasy as he goes deeper. If the child has been born long enough to generate gas in the intestines, the resonant *cul de sac* of the rectum, if it exists there, may be detected by percussion on the sacrum. We have found, also, that by taking a small stick, five inches long, with the ends squarely cut off, and inserting one end into the wound, and against any tissue suspected to be the end of the gut, we can elicit the tympanitic sound by tapping with the finger against the outer end of the stick if the gut is really there. If the gut is not found, then a lumbar or an anterior colotomy must be made above, in accordance with the usual rules for that operation.

PRURITUS ANI.

The causes of this troublesome and obstinate complaint are numerous. In the first place we have here nearly all the itching skin diseases which may occur elsewhere, such as eczema simplex, eczema marginatum, erythema and herpes, and without going into tedious details, we may refer the reader to any modern treatises on skin diseases for the description and diagnosis. Owing to the great sensitiveness of the anal

verge, itching of the part is apt to have a greater intensity than elsewhere. Those skin diseases which are due to a fungoid parasite, such as the *trichophyton*, etc., need careful diagnosis by the microscope in order to determine their character.

A frequent cause of pruritus is the presence of pin worms, or *oxyuris vermicularis*, in the rectum. These produce most trouble in the evening. They may often be found with the speculum, but the surest way is to watch the successive evacuations for some time. In some cases they seem to be easily cured by various remedies, but in others they are never all exterminated, and though made seemingly to disappear for a few weeks or months, yet they multiply again, and require occasional treatment throughout life. Pediculi are sometimes the cause of the itching.

Pruritus ani is frequently a neuralgic trouble, caused by irritation in other parts. For instance, little ulcers or inflamed spots among the *sacculi Horneri*, just above the verge, frequently cause great itching of the verge itself. Internal piles at the same level may have a similar effect.

It is curious, also, that stricture, and inflammation of the upper portion of the urethra, sometimes cause rectal itching. In other cases it appears to be due to some lesion of the sensory nerve fibers surrounding the verge, for it yields to the nerve stretching produced by a forced dilatation of the anus. (See page 101.)

In other instances it is directly or indirectly due to disease of the spinal cord and brain.

Finally, it may be caused by depraved and irritating secretions sent down by the rectum, colon, or higher bowels.

Treatment. The first step is a complete examination of the parts externally and internally. We thus ascertain if there is any eruption of the skin, any ulcers, inflammations or hæmorrhoids present. Ascarides and pediculi are to be searched and watched for. In males the question of stricture or other causes of irritation in the upper half of the urethra are to be decided. If eczema is present, it may require arsenic internally and local treatment externally, as in eczema of other localities. If trichophyton or other parasitic fungi are found, they must be destroyed. If ulcers, inflamed spots, fistulas or internal piles exist, they must be radically cured. If stricture of the male urethra is found or cystitis in either sex, these diseases must be removed. Constitutional disorders must also be treated, constipation corrected, and good digestion secured. If no constitutional or local diseases are found, the itching is probably a neurosis. If due to disease of the brain or spinal cord these organs are to be treated, if to the nerves themselves surrounding the anus, the dilatation of the anus should be tried.

Local applications are often successful, and yet in many cases they totally fail. It is well to have a good list of them for trial.

In case of pediculi, mercurial ointment is sufficient. If ascarides are present, a weak solution of carbolic acid injected into the rectum at evening is at least a temporary help. After trying varied vermifuges, I find that sulphur given internally seems to be one of the best destroyers of the worms, but it does not make absolutely complete work. It should be followed by some purgative containing rhubarb and aloes, or other stimulants to the mucous follicles of the lower bowel.

Whenever the patient has a pretty complete emptying of the bowels with free discharge of rectal mucus, he invariably remains free from trouble for a considerable period, as the habitat of the worms is in the mucus, and mucus evacuations sweep them out more effectually than any others.

When the microscopic fungi are the cause, sulphur, sulphurous acid, bichloride of mercury, and iodine can all be used in quantities and strength adapted to the case. Dr. Carson "cuts" a drachm of camphor, in a trifle of alcohol, and then rubs it up in an ounce of lard, and looks upon it as almost a specific, if well rubbed upon the anus, and also put into the rectum. In all cases the parts should be well washed with soap and hot water before applying the local remedies,—and in many, a washing out of the rectum with the same, through a double canula, is also necessary. When simple chafing is the cause of pruritus, a powder of subnitrate of bismuth, precipitated chalk and starch, is curative.

Compresses of hot water, as hot as they can be borne, relieve many. Compound tincture of green soap, made according to the following formula, is added by Kelsey to the hot water compresses.

℞	Saponis viridis,)ā. ā. ʒj.
	Ol. cadini,		
	Alcohol,		
Misce.			

The following are useful:

℞	Chloroformi.....	fl. ʒj.
	Ung. oxid. zinc.....	ʒj.
Misce.		

- ℞ Mur. cocaine..... gr. xv.
 “ morph.....gr. x.
 Acid carbol. cryst.....℥j.
 Tinct. aconiti rad.....fl. ℥iij.
 Unguent. petrolii.....℥j.
 Misce.

This must not be inserted inside the verge in large doses.

Allingham highly praises the following:

- ℞ Liquor, carbon. detergentis (Wright's) . fl. ℥j.
 Glycerinæ..... fl. ℥j.
 Zinci oxid pulv., }ā. ā. ℥ss.
 Calamin. prep., }
 Sulphuris precip. pulv. ℥ss.
 Aquæ pur. ℥vj.
 Misce.

Also this by the same author:

- ℞ Sodæ biborat℥ij.
 Morph. hydrochlorgr. xvi.
 Acid, hydrocyan. dilut..... fl. ℥ss.
 Glycerinæ fl. ℥ij.
 Aquæ..... fl. ℥viiij.
 Misce.

Kelsey advises this:

- ℞ Acid, carbol.....℥ss.
 Glycerinæ..... fl. ℥j.
 Aquæ fl. ℥iij.
 Misce.

It is pretty strong, and often requires to be diluted.

Kelsey also advises the following:

- ℞ Choral.....℥j.
 Camphoræ℥i.
 Ung. petrol.....℥j.
 Misce,

℞ Menthol ʒj.
 Ol. amygd. dulc. fl. ʒj.
 Acid carbol. ʒj.
 Zinc. oxid. ʒij.
 Cerat. simp. ʒij.
 Misce.

℞ Ung. picis. ʒiij.
 “ belladon. ʒij.
 Tr. aconiti rad. fl. ʒss.
 Zinci oxid. ʒj.
 Ung. rosarum. ʒiij.
 Misce.

When any of these are found too strong they require to be diluted or weakened. Those containing power-

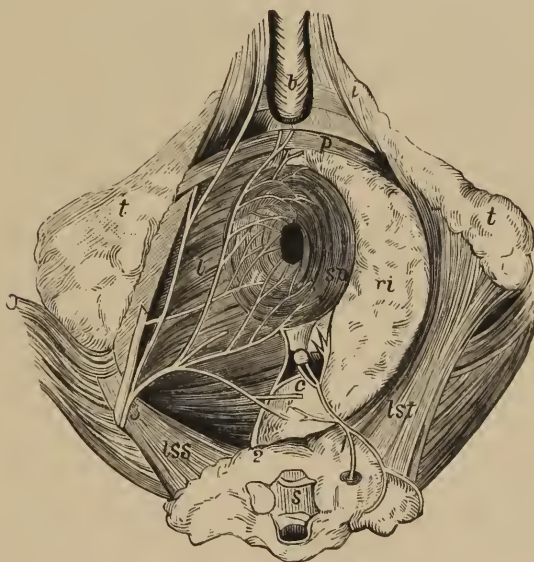


Fig. 37.—NERVE DISTRIBUTION ABOUT THE ANUS.

1. Sacral Nerves; posterior root distributed to surface of coccyx and external sphincter. 2. Anterior root, to external sphincter. 3. Pudic nerve and its branch, the inferior hæmorrhoidal. t. Tub. ischii. s. Sacrum. c. Coccyx. Sp. Ext. sphincter. l. Levator ani. p. Transversus perinei. ri. Ischio-rectal space.

ful narcotics must not be inserted in too large doses into the rectum.

Allingham finds that the mechanical pressure of a hard pad bound against the anus, or the insertion of a smooth hard rubber plug into the rectum is a substantial relief to some patients.

Nerve Stretching. A sort of nerve stretching accomplished by forcibly dilating the sphincters has a curative effect on some obstinate cases of pruritus, which are probably to be classed as neuroses.

The cut on preceding page (after Hilton) gives a clear representation of the local nerve distribution.

CHAPTER X.

MECHANICAL INJURIES.

Incised Wounds. These may be caused by accident, or be a necessary result of operations. Owing to the location, purely accidental incisions are rare. A part of them are made by surgeons acting carelessly in the operation of lithotomy. They occur also from stabs and falls on sharp objects. The incision bleeds freely, and may do so dangerously. The gas, mucus and fæces also escape through the wound, and when the accident occurs in lithotomy urine also flows out at every micturition. The lithotomy cases are not very uncommon, and have occurred in the practice of nearly all the world's great lithotomists. Most of them heal spontaneously, but a few of them result in obstinate recto-urethral fistulas. There is also danger from peritonitis if the peritoneum is wounded, and of septic cellulitis and abscesses if fæcal effusion takes place into the connective tissue.

Treatment. Incised wounds of the rectum which simply cut across the sphincter into deeper parts, but do not injure important organs, if seen early; may be closed with sutures as in other incised wounds. If the weapon has entered like a stab, tunnelling into the rectum, and therefore leaving the sphincter undivided, and is seen early, it may be sewn up on the rectal side in hope to get a union by first intention. If some days have elapsed since the wound, it is now a fistula and must be treated, as directed in the chapter on that subject.

The rectal wounds made in lithotomy are sometimes among the most annoying of cases. True, they often heal spontaneously, but if they fail of that, they become recto-urethral fistulas which often resist repeated operations. When the accident first occurs, there is no doubt that the incision would have the best chance if closed at once by sutures on the rectal side, but the lithotomist rarely has the requisite instruments with him at the time, and the opportunity passes by. Most authors write on this subject like perplexed men, but generally agree reasonably well on the following course:

If the primary operation for closing the incision has failed, or not been attempted, take plenty of time for expectant treatment, which results in the spontaneous cure of the majority of cases. The wound should be kept clean, the rectum kept empty, and a sheaf, consisting of three large soft rubber catheters, kept in the anus for drainage, that there may be no pressure of gas or mucus in it to force open the contracting fistula.

If this fails, and the remaining opening is very small and high up, success will sometimes be obtained by electro-cautery of the internal orifice, and the re-introduction of the sheaf of catheters. If this fails, or if the opening is both large and high up, then anæsthetize the patient, make a wide dilation of the rectum, and operate on the part as in vesico-vaginal fistula. The operation is somewhat difficult, and not sure of success. It is well, in some cases, to vary it by raising a flap of mucous membrane, and sliding it across the refreshed opening, stitching it to its new place. If this also fails, our best authors are silent as to what should be done next. Apparently, they are in despair, so far as these

upper fistulas are concerned. In the lower ones, however, where the orifice is down near the sphincter, if plastic operations fail, success is pretty sure by simply cutting the fistula through into the gut, as in ordinary fistula in ano, and treating the wound as usual after that operation. Our opinion is, that a bold extension of this plan to the higher fistulas would succeed, with some modifications to adapt it to the locality. We have, however, not yet had occasion to test this opinion in actual practice.

When an incised wound has opened the peritoneal fold, it should be freely opened and explored, and the peritoneal rent sewed up. If blood and fæces have escaped into the cavity, they should be immediately washed out, even if a regular laparotomy has to be performed for the purpose.

Punctured and Lacerated Wounds of the Rectum.

These are the result of various accidents, such as farmers sliding from haymows upon pitchforks or sharp stakes, falls among crushed and broken timbers, and goring by the horns of cattle.

They are considerably dangerous when they lead to the effusion of the rectal contents into the loose connective tissue. In such cases they require free openings below for washing and drainage, and especially a thorough division of the sphincter, and, if the peritoneal cavity is opened, cleansing, sewing up, and possibly laparotomy may be required, just as in incised wounds.

Gunshot Wounds. These are decidedly dangerous, not so much from the injury to the rectum itself, as from the wounding of the other organs by the same bullet. The Surgeon General's "History of the War of the Rebellion," gives 305 cases, with 44 deaths.

In many of these cases there is great effusion of rectal contents into the connective tissue, and sometimes into the peritoneal cavity. The urinary passages, also, may be wounded, and contribute deadly addition to the putrifying mass.

These cases require prompt action. It is well to extract the bullet, if possible, but that is not the chief thing. Hæmorrhage must be stopped, if troublesome, by any and all of the usual methods. Dr. Bushe long ago devised a cold compressor. A bladder was attached to a double tube in such a way that it could be inserted into the rectum, and strongly distended with ice water.

Dupuytren long ago called attention to the importance of preventing septic infiltration by such a thorough division of the sphincters as would insure a free downward drainage. At a later period, Simon, of Heidelberg, wrote a paper of great merit, strongly enforcing the same measure, and the whole experience of the world to this hour emphasizes these three precepts:

1. Divide the sphincter, in most cases, up to the track of the bullet, and keep the wound wide open.
2. Make other free incisions wherever needed.
3. Irrigate thoroughly with antiseptics.

In these ways the mortality of these serious wounds may be reduced to the lowest rate permitted by the concomitant injuries.

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